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THESIS

NAVAL SHIPS ACQUISITION STRATEGY
FOR THE VENEZUELAN NAVY

by

Jose Manuel Leon Lara

June 1982

Thesis Advisor: M. Sneiderman

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This thesis presents the results of an extensive research of the United States Navy and Venezuelan Navy acquisition processes for naval ships. A comparative evaluation is performed and critical areas have been identified in carrying out this complex process in both navies, resulting from various strategic environments and diverse domestics capabilities which combine to create unique acquisition methods. A proposed

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Naval Ships Acquisition Strategy for the Venezuelan Navy

by

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Submitted in partial fulfillment of the
requirements for the degree of

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ABSTRACT

This thesis presents the results of an extensive research of the United States Navy and Venezuelan Navy acquisition processes for naval ships. A comparative evaluation is performed and critical areas have been identified in carrying out this complex process in both navies, resulting from various strategic environments and diverse domestics capabilities which combine to create unique acquisition methods. A proposed acquisition strategy is formulated from a management point of view, based on two models, to improve the existing Venezuelan Navy acquisition process-- Model "A" to the procurement of ships from the non-U.S. international market, and Model "B" specifically to the acquisition of naval vessels from the United States of America through Military Aid/Foreign Military Sales Programs.

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I. INTRODUCTION

A. THE PROBLEM

In the last decade, the Venezuelan Navy has been pursuing a vigorous naval ship acquisition program. There does not yet exist a comprehensive general policy that allows the organization to effectively carry out this complex management process. The existing "way of doing" should be examined and revised.

B. NATURE OF THE PROBLEM

Venezuela is searching for modern and improved methods of administration and organization in order to handle more efficiently the large amount of resources that are under control of the public sector. The country has changed in the last thirty years in many aspects, such as political, economic, social and military, but change in the administrative procedures has been coming too slowly.

The principal obstacle faced by the government to achieve the proposed goals and objectives is the separation that exists between the tasks that arise from new realities and responsibilities that have to be met for the country today in general, and the public sector in particular, and the inability of its administration to optimize the utilization and benefits of the broad resources and investments.

In today's rapidly changing world, which demands the application of effective management tools and administrative

procedures, only a significant effort in the modernization of Venezuela's public administration will make possible the achievement of the ambitious plans, programs and projects that have been formulated to achieve a meaningful development.

A group of laws has recently been enacted by the national government. These include:

- The Organic Law of the National Treasury
- The Law for the Centralized Administration
- The Organic Law of the Budgetary System.

Such instruments must be utilized by the Public Sector to collect and allocate the resources leading to the accomplishment of the institutional, social and economic goals of the country. This novel process is based on planning, programming and budgeting as a framework for implementing an adequate management system.

In the Venezuelan Navy (VN), the above group of laws is presently in the implementation stage. The reason for implementation is to arrive at an appropriate instrument for planning, programming, execution and control that could be introduced in a suitable form to permit effective management of the organization.

This need has led to the development of this research in order to find feasible and acceptable methods to apply appropriate management strategies in the naval ship acquisition process.

The acquisition process for major systems has been selected because its improvements could be realized in an effective way in the VN if the following actions are instituted:

a) Creating a suitable environment acceptable to the people at the highest management levels.

b) Obtaining high-level support to make the necessary changes in organizational and functional structures.

A favorable feeling exists in the General Command of the Navy to finding a solution to the administrative problem that has existed.

C. IMPORTANCE OF THE RESEARCH

This thesis is oriented toward the determination of adequate actions which will allow the establishment and implementation of new policies, procedures and instructions to be used in the VN as a suitable strategy to carry out the naval ship acquisition process.

The purpose is to optimize the human, economic, material and technological resources invested in order to achieve the multiple objectives and goals required to accomplish the Venezuelan Navy's assigned mission, particularly when a program for the acquisition of naval ships is to be developed. It would be valuable for the VN, from the management point of view, if various alternatives are examined and an acquisition model established for use in the whole process.

D. GENERAL ASPECTS

In 1974, the Venezuelan Navy, and by extension the Venezuelan Government, undertook a most ambitious naval ship acquisition program. This program was officially initiated on October 24, 1975, with a contract between the National Executive of the republic of Venezuela, represented by the Ministry of Defense (MD) and the Cantieri Navali Riuniti Societa per Anzioni (CNR) located in Genova, Italy for the construction of six "Mariscal Sucre" class frigates (MSC). Before that, six patrol boats had been acquired from Great Britain and two submarines from Germany. In both cases the VN had encountered substantial difficulties in devising a management system which would permit the use of acceptable acquisition strategies for the procurement of naval ships.

The acquisition of six landing ships (two LST and four LSM), eight ocean patrol boats, and sixteen coastal patrol boats is being negotiated in the international market. These ships already had been built and proved in the respective countries, with the results that prospective shipbuilders have formulated almost unilaterally the design package, construction timing and Integrated Logistic Support (ILS). As a consequence, inherent difficulties in the ship acquisition process have been recognized by the VN and continued efforts to improve the acquisition process are being examined.

On the other hand, the risks of building modern naval vessels and the time frame have become so large (seven years

for MSC frigates) that new acquisition strategies are called for to allocate such risks equitably to contracting parties. Three types of risk must be addressed: technical risk resulting from the complexity of ship design, schedule risk caused by the four-to-seven period needed to construct a ship, and cost risk of predicting the costs of the multiple elements of the ship construction process.

The focus of this research is on the management of the acquisition process. The process of acquiring naval ships will become more complex in the future. The VN, as other countries have, is facing reduced numbers of personnel and limitations on personnel grades with knowledge and skills in system acquisition. Specifically, the overall organization is lacking a sufficient number of experienced personnel in the areas of Program/Project Management, Negotiation and Contracting, Cost Estimation and Integrated Logistic Support (ILS).

E. MAIN OBJECTIVES

1) To determine a suitable strategy for the naval ship acquisition process in the VN from the determination of needs to delivery for deployment.

2) To identify whether the organizational and functional structures of the VN require some change in order to improve the major weapons procurement process.

3) To establish whether the positions of the Program/Project Manager, Contracting Officer and Technical Acquisition Team have been used properly, with the overall authority and responsibilities well defined.

4) To review the ship acquisition cost estimating process as it relates to recent cost growth in vessel and weapons procurement in the VN.

5) By examining the "Mariscal Sucre" Class Frigates acquisition project, to determine whether it has been successful as a naval ship acquisition program and whether the organizational and functional contracting and negotiating structures of the VN should be modified.

6) To indicate policies and procedures necessary to achieve proper ILS for the life cycle support of the ship and its weapon systems to be acquired.

F. DEFINITION OF NAVAL SHIP ACQUISITION PROCESS

In order to pursue the research objectives and to orient the investigation, an understanding of what constitutes a successful naval ship acquisition must be first established. A consensus in the acquisition community of requirements appears to be as follows:

The first prerequisite for success is that a legitimate defense need exists, and that of all the possible alternatives, a naval ship best satisfies this need. The second prerequisite for success is that there exist prioritized requirements derived from the defense need. These requirements are to include cost, schedule and performance elements established for the duration of the ship's life cycle. The third major prerequisite for success is that the acquisition process can be used to acquire different types of naval warships.

G. SCOPE OF THE THESIS

The process for acquisition of a naval ship, its systems and subsystems is very complex. Many actions will be required

in order to carry out a ship acquisition program from the determination of the need until the deployment of units. Logical integration of these actions to achieve a smooth effort requires much early planning, and constant updating of the plans as time progresses. This must be done in order to take into consideration unforeseen or changing conditions. Two ship acquisition programs are never exactly alike.

Because of the complexity of the acquisition process, this thesis focuses only on that aspect of naval ship acquisition strategy regarding the management and the attainment of objectives already indicated.

H. THESIS METHODOLOGY

The methodology used in this thesis consisted of:

1) Obtaining Information
   a) Literature Search
   b) Interviews
2) Analysis of the Information
3) Recommendations for Venezuelan use.

1. Literature Search

Following sources were used:

a) Defense Logistics Studies Information Exchange (DLSIE), U.S. Army Logistic Management Center, Fort Lee, Virginia, 23801.

b) Dudley Knox Library Technical Report Section, Naval Postgraduate School, Monterey, California, 93940.

c) Acquisition Library, Administrative Sciences Department, Naval Postgraduate School, Monterey, California, 93940.

d) The Venezuelan Navy Mission in Italy (VNMI) in charge of "Mariscal Sucre" class frigates project; copies of numerous documents, projects publications, memoranda, instructions and charts.

e) Documents from the Venezuelan Navy containing information relating to the topics researched.

2. Interviews

During the period January to March 1982, the author conducted interviews and discussions with knowledgeable people in the ship acquisition field who were visiting the Naval Postgraduate School, faculty members and other personnel working in areas such as Contract Administration, Program/ Project Management, Foreign Military Sales, Integrated Logistic Support, Cost Estimation and Technology Transfer.

Naval ships acquisition strategy points of view were obtained in interviews with Mr. Alan M. Knobler, Production Manager for the U.S. Navy DDG-51 Class Program, and interchange of opinions with the Chief of the Venezuelan Naval Mission in Italy for the "Mariscal Sucre" Frigates Class acquisition project and people from the Venezuelan Navy working for the Logistics organization. The investigation was conducted in order to make the comparison between the U.S. and the VN Navy acquisition process for naval ships to establish a rational basis for the search and a framework for the analysis.

This time spent, and cooperation experienced, in all the interviews and interchange of opinions was very much appreciated and there was an atmosphere of frankness in the

discussions. Comments, critical reviews and, suggestions in this thesis by the author are intended to be constructive and not directed at a particular individual or organization.

I. PRESENTATION OF THE INVESTIGATION

This thesis is organized in the following manner:

Chapter I introduces the thesis indicating the problem, nature of the problem, main objectives of the investigation, and defines the parameters within which it is developed.

Chapter II and Chapter III describe the U.S. Navy and Venezuelan Navy acquisition processes for Major Defense Systems, respectively, emphasizing the existing acquisition process for naval ships.

Chapter IV presents a comparative evaluation between these two processes, determining critical areas in both acquisition methods.

Chapter V describes a proposed acquisition strategy for the Venezuelan Navy to procure naval ships from countries with a shipbuilding industry in the International Market.

Chapter VI presents the researcher's conclusions and recommendations.

II. THE U.S. MAJOR SYSTEM ACQUISITION PROCESS

A. OVERVIEW

The management process used in acquiring major weapon systems has evolved over the years in the United States. The process of procuring defense systems in the 1950s was complex. The programs lasted many years and consumed large amounts of money. Nevertheless, this process basically included all the functions that normally pertain to the acquisition of goods or services such as:

- Preparation of a description of the requirement (need)
- Solicitation and selection of the sources
- Negotiation and award of a contract
- All the activities involved in contract administration
- Producer/Service Acceptance.

The key steps in the acquisition process during the 1950s and through the 1960s and 1970s are illustrated in Figure 2.1 [Ref. 1: 15].

The defense system acquisition environment began to undergo marked changes in the early 1960s. After a decade of experience with the acquisition of high-technology defense systems, Department of Defense (DoD) attention began to shift toward integrated planning and programming, and to using available resources more efficiently throughout the defense system acquisition process.

THE PROCUREMENT PROCESS

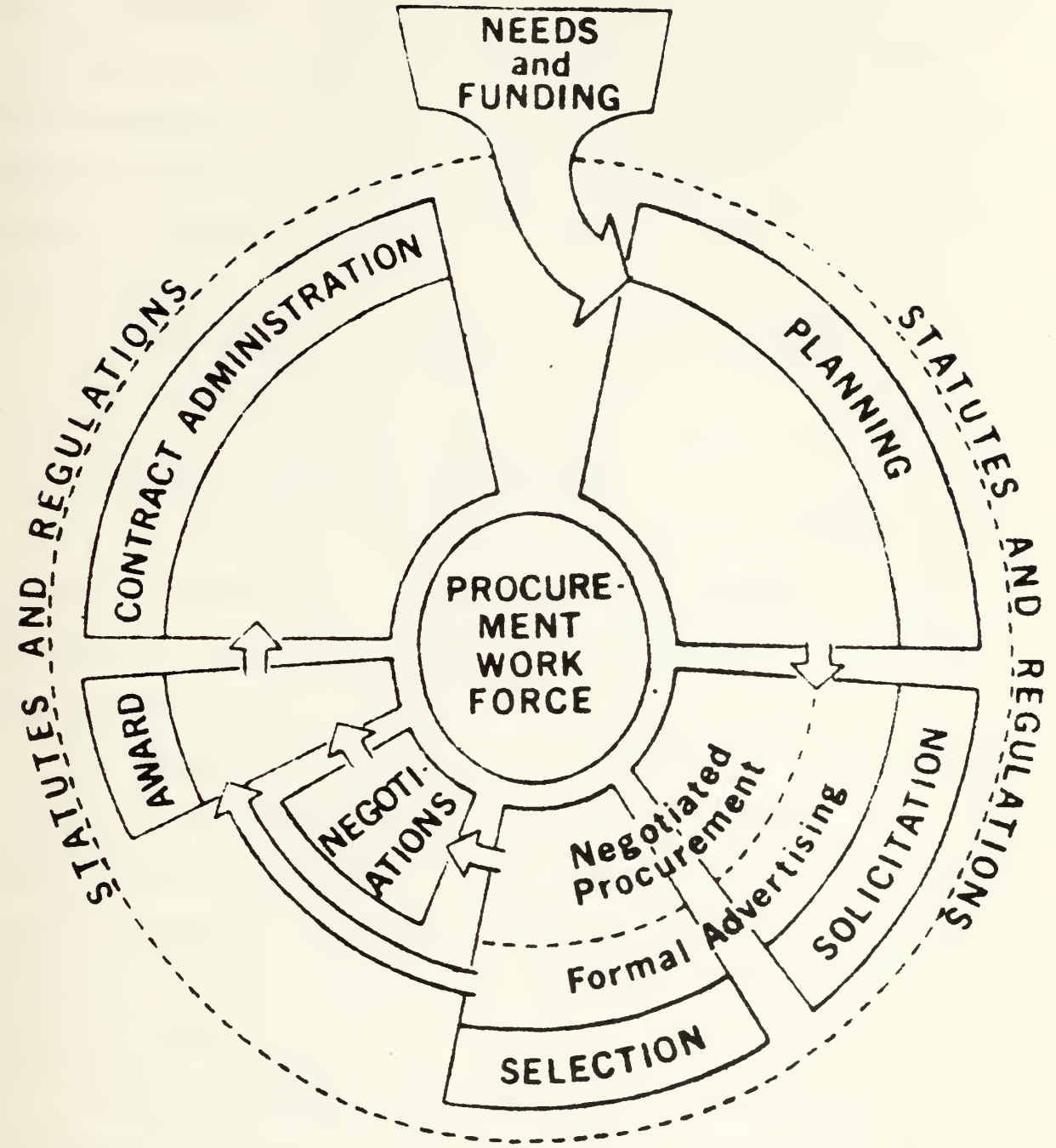

Figure 2.1

Source: Commission on Government Procurement Report of 1972

In January 1961, Robert McNamara became Secretary of Defense (SECDEF). During his first year in office he decided to centralize the authority and planning for the defense establishment at the level of the Office of the Secretary of Defense (OSD) and to decentralize operations. He acted in order to improve the defense planning process by instituting the following:

1. Planning-Programming-Budgeting System (PPBS)
2. Five-year Defense Plan (FYDP) and
3. Use of System Cost-effectiveness Analysis in the defense decision-making process.

Up to this time, emphasis was on achieving technical performance rather than a balance among performance, cost and schedule as used today in the U.S. acquisition environment for defense systems. (Fig. 2.2)

The McNamara innovations concerning the system acquisition process during the 1960s led to the establishment of decision milestones at the output of the various phases, for approval by the Secretary of Defense to proceed with the next phase, and this is still the current approval process with few modifications. [Ref. 3]

In 1969, Congress displayed some preoccupation with the economy, the conflict in Vietnam and the escalating costs of defense system programs. To respond to this situation, then Deputy Secretary of Defense David Packard initiated a number of actions aimed at improving the management of the defense

PLANNING BASELINE FOR BALANCED PROGRAM PERFORMANCE

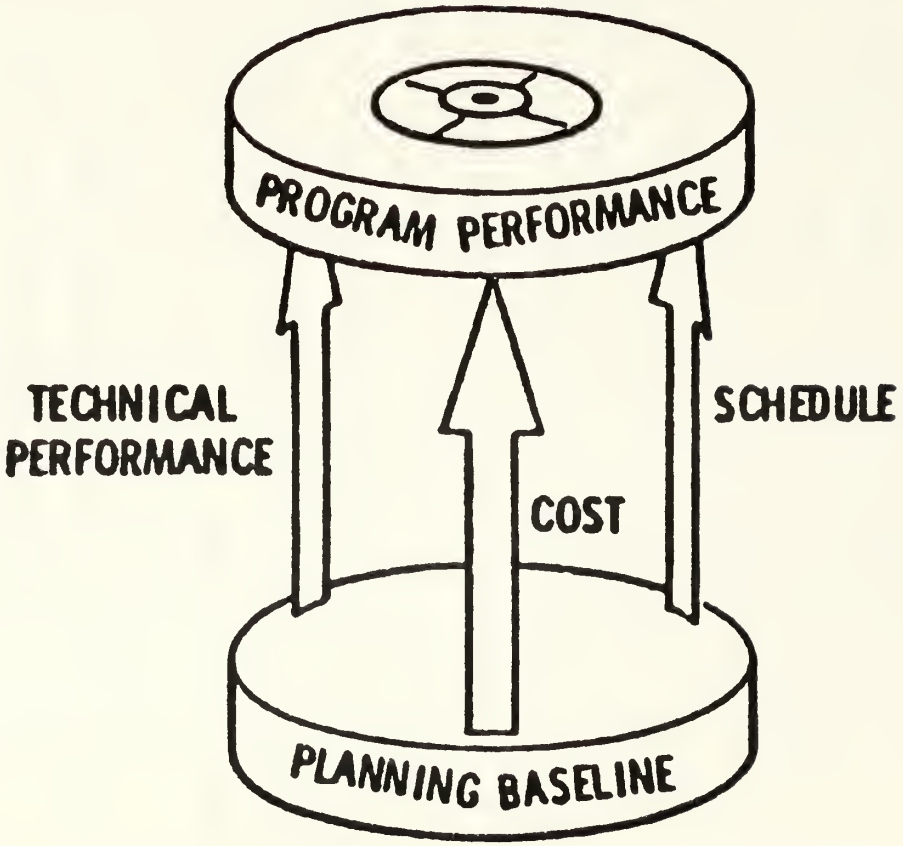

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Figure 2.2

system acquisition process and gaining control of system acquisition costs. Mr. Packard established a Defense System Acquisition Review Council (DSARC) within OSD to advise him of the status and readiness of each major defense system to proceed from one program phase to the next phase in its life cycle [Ref. 2]. At about the same time, he took a number of other important steps; for example, that dependence be placed on hardware competition using prototypes. Relative to test and evaluation (T&E), he requested that it begin as early as possible and be conducted throughout the acquisition process to assess and reduce risks and to estimate the operational suitability and effectiveness of the system being developed.

In May 1970, Mr. Packard issued another memorandum citing other ways by which the acquisition of major systems could be improved. The essential features of this memorandum served as the basis for the issuance, in July 1971, of Directive 5000.1 "Acquisition of Major Defense Systems," with the purpose of improving acquisition management of major system acquisition. It was the first of a number of directives and associated instructions in the actual "5000 series", and established the major decision milestones and phases of the defense acquisition process. [Ref. 1: 36]

In December 1972, the Commission on Government Procurement (COGP) presented its report to the Congress. This Commission, the first ever to concentrate exclusively on procurement, made 149 recommendations. Among the principal

findings of this Commission relating to this thesis, were the following:

- Government procurement policies and procedures were needlessly diverse.
- Congress was ill-equipped to evaluate performance, cost and schedules for new defense programs in the context of national security objectives and priorities.
- There was no systematic government-wide effort for studying ways to improve the procurement process. [Ref. 5].

In response to the recommendations of the COGP, the Director, Office of Management and Budget and the Administrator, Office of Federal Procurement Policy (OFPP), issued in April 1976 a new government-wide policy for the acquisition of major systems [Ref. 6]. This new policy, contained in OMB Circular A-109, applies to system acquisitions of all the U.S. executive agencies as well as defense and space systems. The different agencies were to prescribe additional criteria and/or relative dollar thresholds for determining which agency programs are to be classified as major systems. Actually, this dollar threshold for DoD has been revised a number of times and at present applies to systems with an anticipated cost which exceeds $200 million for research, development, test and evaluation (RDT&E) or when the production costs of the program are expected to exceed 1 billion dollars.

OMB Circular A-109 specifies certain key decisions and outlines the logical sequence of activities in the major system acquisition process. This process in the DoD environment is concerned with the decisions and actions required to

plan, develop, produce and provide support to a military system after installation or deployment. Figure 2.3 illustrates the entire process from a management viewpoint in accordance with the purpose of this thesis. It shows the Mission Management and the Product Management parts of the process with the Program Manager having the principal role.

B. THE SYSTEM LIFE CYCLE

A system, to be useful, must satisfy a need. However, designing a system to just meet the current need is not usually sufficient. The system must be able to meet a continuing and changing need over a specific period of time in order to justify the investment in time, money and effort. Thus, a system must be considered in a dynamic sense--the life cycle or "cradle to grave" viewpoint. The system life cycle may be said to originate in the perception of a need and to terminate when the system is retired as obsolete. [Ref. 7]

OMB Circular A-109 defines a Major System...."as that combination of elements that will function together to produce the capability required to fulfill a mission need. The elements may include, for example, hardware, equipment, software or other improvements or real property." In the same way, Major System Acquisition Programs are defined as.... "those programs that:

1. Are directed at and critical to fulfilling an agency need.

MAJOR SYSTEM ACQUISITION PROCESS

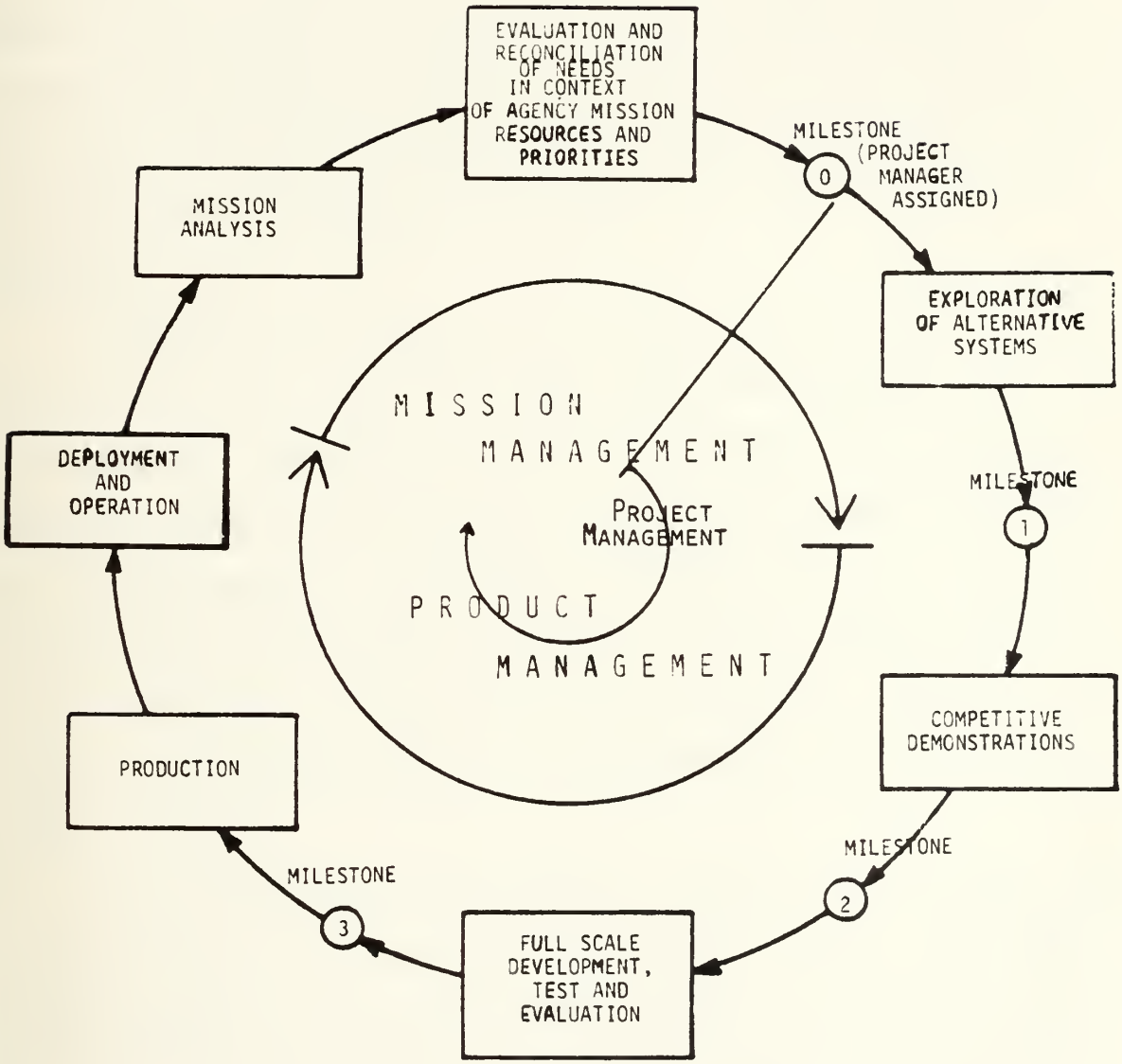

Figure 2.3

Source: Ref. 10

2. Entail the allocation of relatively large resources.

3. Warrant special management attention.

Each major system acquisition program has its unique features; no two are identical. Differences in time, cost, technology, management and business contracting approach must be recognized. However, despite the differences, the basic acquisition process is common to all programs. Figure 2.3 illustrates the basic process or cycle, with the boxes describing the type of activities involved, and the numbered circles indicating the major decision points requiring agency head approval.

"A system life cycle may be originated in one of three ways--as a result of a new need, new technology or as an iteration of a previous system whose life cycle is nearing completion due to obsolescence. The next generation system, to a large extent, satisfies an increased need (or perhaps the original need better), whereas the new system satisfies a need which may not have previously existed, perhaps as a result of a new scientific or technological breakthrough." [Ref. 7: 1]

All systems have life cycles. Aircraft have design life cycles of 10 to 20 years, ships have 20-30 year life spans and computers, because of technological obsolescence, seem to have as little as 3 to 5 year lifetimes. Between the two end-points of a system's life, there exist a number of phases through which the system passes. In the broadest sense, three

periods could be considered--the Planning Period, the Acquisition Period and the User Period.

C. "THE USER-PRODUCER" DIALOGUE

Every system has a user and a producer. In order to ease the understanding about the environment, decision making, functional and structural organizations, and interrelations in the Venezuela and U.S. acquisition process for major defense systems, the life cycle of the system can be viewed as a set of activities which are of concern to the user of the systems and to the producer of the systems.

The user is concerned with stating and developing the needs and for the operation and support of the system. Thus, he provides the input requirements to which the producer designs. The producer is concerned with translating the user's need into the design, production and installation of a system which meets the need and can be operated and supported in a cost-effective manner. (Fig. 2.4)

A typical example of the user-producer dialogue in the U.S. Navy (USN) is that between the fleet, represented by the Chief of Naval Operations (OPNAV), as the user and the Naval Material Command (NAVMAT) and its System Commands, for example, the Naval Sea System Command (NAVSEA), as the internal producer. NAVSEA represents the user to industry, the ultimate producer.

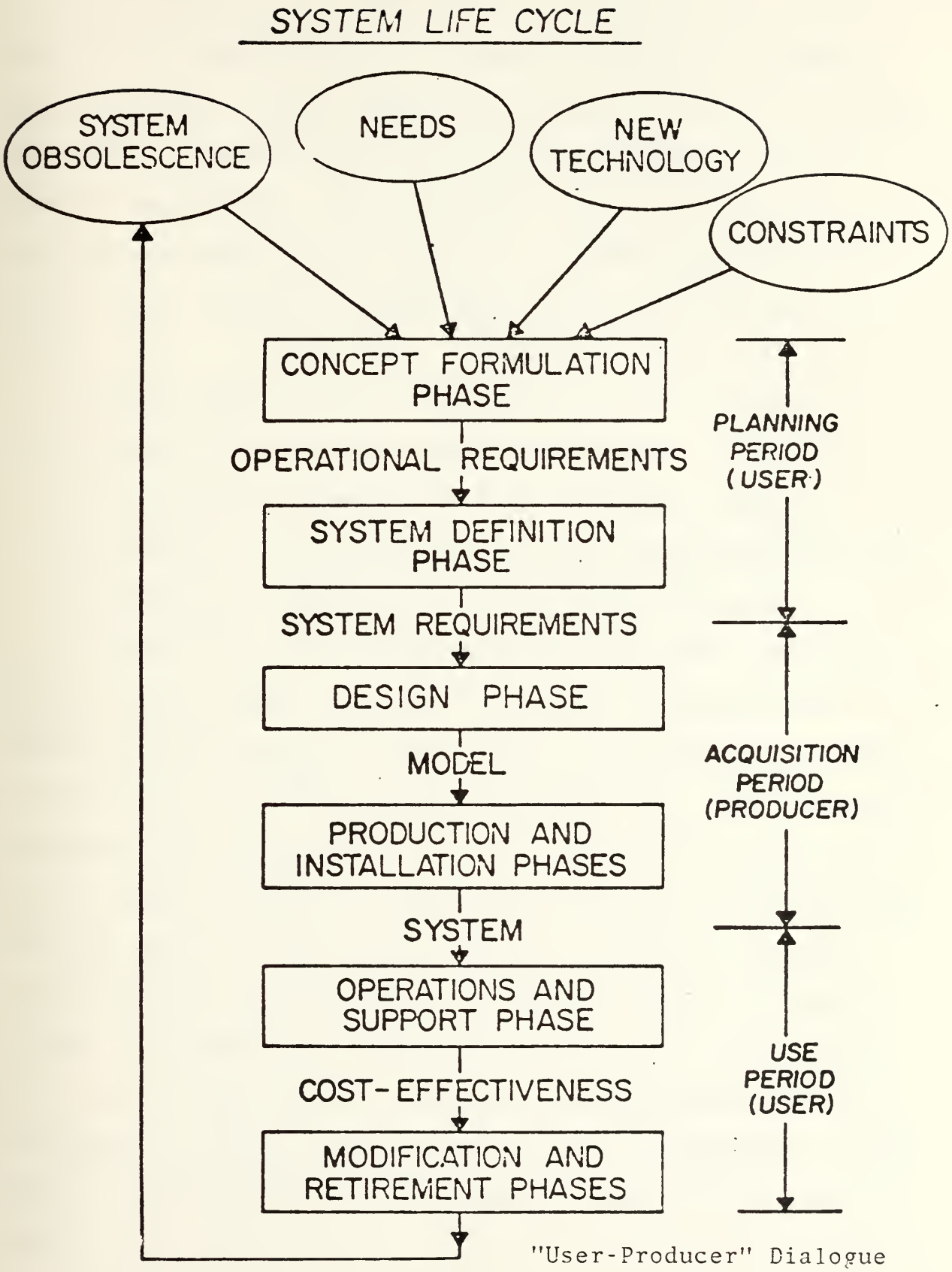

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Figure 2.4

D. PHASES OF THE DOD ACQUISITION PROCESS

In response to the requirements of OMB Circular A-109, DoD in 1977 reissued Directives 5000.1 and 5000.2 dealing with the major system acquisition process. The new DoD Directive 5000.1 updated the policy for the management of major system acquisitions. The principal change in DoDD 5000.1 was the addition of milestone 0 as a SECDEF decision point to initiate a program in accordance with OMB Circular A-109. (Fig. 2.5)

The four key milestones were designated as follows:

- Milestone 0 - Program Initiation Decision
- Milestone 1 - Demonstration and Validation Decision
- Milestone 2 - Full-scale Engineering Development Decision
- Milestone 3 - Production and Deployment Decision

DoD Directive 5000.2 supplemented DoDD 5000.1 and established policies and procedures to be used to support the SECDEF decision-making process for major system acquisitions. In addition to the DSARC held at the OSD level for designated programs, it also established a Service System Acquisition Review Council (SSARC) in each military service to review the programs at the service decision level as well as to make recommendations to the SECDEF on programs subject to DSARC review. The DSARC and (S)SARC were to be held at milestones 1, 2, and 3 supported by a Decision Coordinating Paper (DCP). Milestone 0 decisions were supported by a new document called Mission Element Need Statement (MENS), required for a system start.

LIFE CYCLE OF MAJOR SYSTEMS ACQUISITION

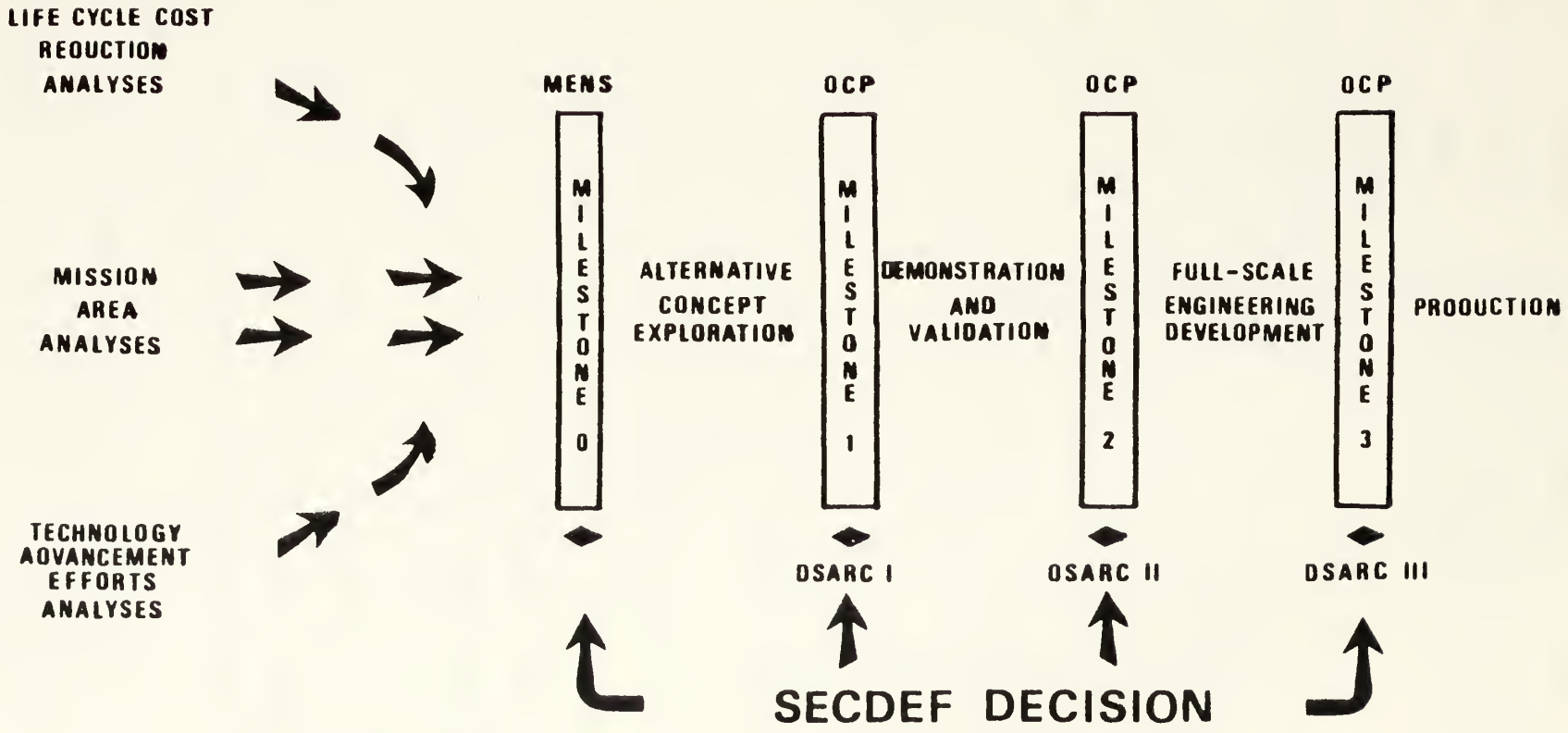

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Figure 2.5

Because of its relevance to the objectives of this thesis, following are indicated the different acquisition process phases as relates to the U.S. Navy environment where this process is actually carried out.

1. Mission Area Analysis Phase

In the U.S. Navy, MENS are generated by OPNAV from continuing analysis of Navy mission areas to identify needs as related to perceived threats. Needs are to be stated in terms of operational goals to be accomplished (threats to be countered), rather than in terms of hardware performance or characteristics. The objective of this phase in the system acquisition process is to identify those areas in which existing or projected capability is deficient in meeting the Navy mission needs. Efforts are directed toward identifying and evaluating the operational deficiency.

Sufficient information is collected to allow two important critical transformations to be made. These are: the definition of the threat in terms of its physical and functional parameters, both current and projected, and the development of measures of effectiveness to be used in order to determine whether a deficiency exists, and the military worth of meeting the mission deficiency by a new system. The threats depend on the extent to which intelligence and technological information is available. (Fig. 2.6)

In the process of developing the need, the Navy should consider the feasibility of the mission in terms of military

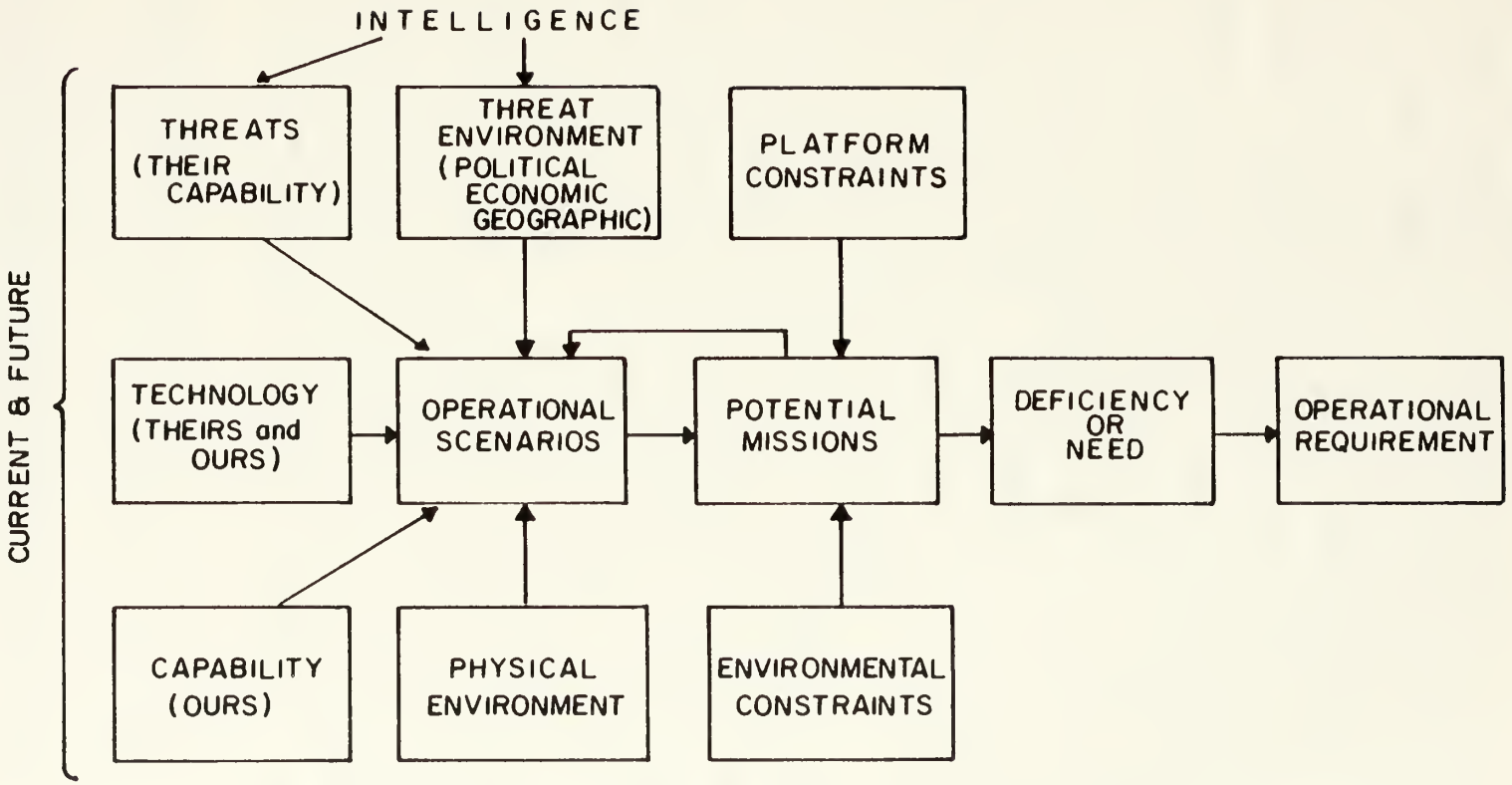


Figure 2.6 Mission Element Need Analysis

Source: Ref. 10

worth and available technology, and economic, financial, political and other constraints.

The Services proposes the MENS document to recommend the initiation of a new system acquisition program. This document is submitted by the Navy to the UnderSecretary of Defense for Research, Engineering and Systems who is designated by the SECDEF to be the Defense Acquisition Executive (DAE), the Office of the Joint Chiefs of Staff (OJCS), and OSD. After the review, recommendations are presented to the SECDEF for approval of the MENS. The SECDEF approval is the Milestone 0 decision point, and allows the Navy to proceed into the next phase (Concept Exploration Phase).

Immediately upon the acceptance of the MENS, a Program Manager (PM) is supposed to be assigned to the program. This action is very important for the purpose of this thesis. As can be observed in Fig. 4, the Program Manager is the key figure during the whole process. He reports directly to the Chief of Naval Material (CNM) or a Systems Command (SYSCOM) and operates under a charter which assigns the PM the responsibility for and the authority to conduct the program within approved performance, funding and schedule thresholds. [Ref. 3: 164]

The Program Manager's tasks include, but are not limited to:

- Preparing and maintaining an acquisition strategy and programs to carry out this strategy

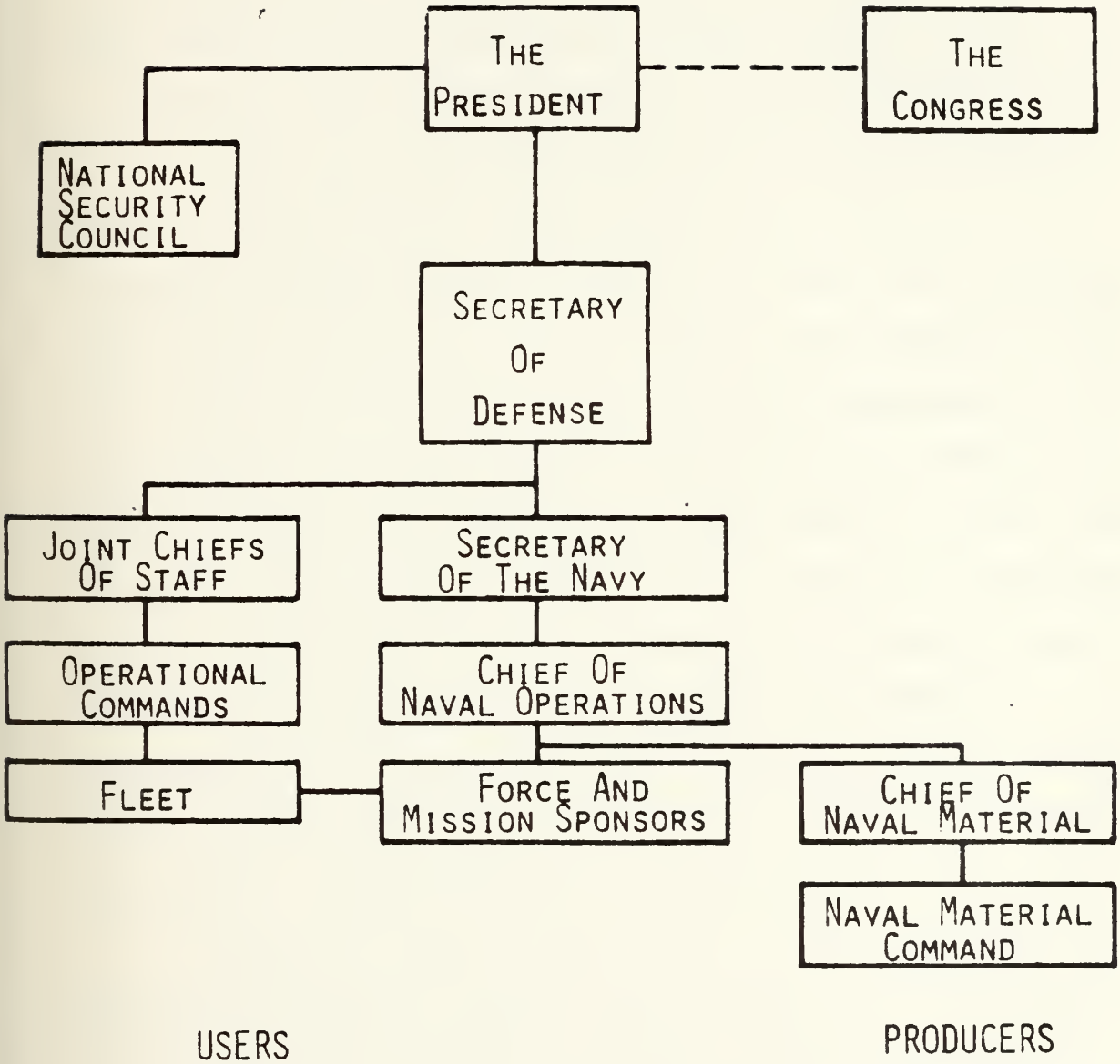
- Organizing his office, usually matrix method in the Navy
- Establishing scope, cost and schedule of his project
- Approving system designs, engineering release for production, engineering changes and engineering reports
- Ensuring proper selection, tailoring and application of management techniques required to achieve the goals of the project
- Establishing policy for making business and technical management decisions, specifically, trade-offs between cost, schedule and performance
- Selecting the best technical approach and assessing the impact of proposed changes.

Finally, it is desirable to indicate the different organizations, positions, offices, and participants (User and Producer) involved in the evolution of a Navy need, consistent with the "User-Producer" management approach (Fig. 2.7).

2. Alternative Concept Exploration Phase

Milestone 0 marks the beginning of the Concept Exploration Phase during which alternative concepts are solicited, proposed and selectively evaluated. The first stage in this phase is an in-depth expansion of the mission feasibility studies that were initiated prior to Milestone 0 to establish and define criteria for synthesizing alternative systems concepts.

The second stage is the commencement of preliminary approach studies exploring the alternative system concepts. Investigation in-depth of the system cost and effectiveness of each alternative candidate approach is done by the Navy through the Program Management Office (PMO). The solicitation



ORGANIZATIONS INVOLVED
IN NEED EVOLUTION

Source: Ref. 10 Figure 2.7

for proposed solutions is in terms of mission needs and not explicitly system characteristics, and provides complete information including mission tasks, operating environment, and the threat. Each approach is analyzed, evaluated and optimized in order to present the recommended alternatives for the Milestone 1 decision at the end of this phase. Adequate competition is desirable to avoid premature commitment to solutions that may prove costly or are marginally effective.

The third and last stage in this phase is the preparation of the Decision Coordinating Paper (DCP) and the Integrated Program Summary (IPS) which detail the recommended approach with respect to cost, schedule and technical risk. These documents are forwarded through the Department of the Navy Acquisition Review Council (DNSARC) to the DSARC review. These reviews and recommendations are submitted to the SECDEF for approval, not only at Milestone 1, but also at Milestones 2 and 3. The DCP is the principal working document used at this phase. Approval of the program by the SECDEF, by issuing the Secretary of Defense Decision Memorandum (SDDM) at Milestone 1, allows the acquisition process to continue into the next phase. (Demonstration and Validation).

Among the factors that should be considered by the PM in developing his acquisition strategy are: The background of the MENS, how to obtain as much competition as desirable and how far along into the program this competition should be carried out; the type of organization needed to manage

the program and the proper balance of logistic, manning and design attributes.

3. Demonstration and Validation Phase

Milestone 1 marks the beginning of this phase. The Demonstration and Validation Phase is pivotal in the acquisition process. Dollar expenditures during this phase represent only about 3% of the system but the decisions made here may determine 70% of the total life cycle costs. (Fig. 2.8)

However, since expenditures in the succeeding phases are largely determined by the decisions made here, the cost/schedule/performance trade-offs made during this phase will have a marked impact on life cycle cost. During this phase, the selected alternatives are refined through extensive study and analysis. Advanced development models (prototypes) of high risk parts of the system may be developed to reduce risk. The prototypes are tested and evaluated, usually by the contractor and the Navy.

Competition is actively encouraged and prototypes may be developed simultaneously by two or more contractors. These prototypes and other experimental models are used to demonstrate that the required performance capability can be achieved, while reducing the technical risk. Prototypes for ships are not required. The DCP and IPS are again prepared for review by the DSARC at Milestone 2, which is the end of this phase. Recommendations from DSARC and subsequent approval for SECDEF allows the program to move to the next phase.

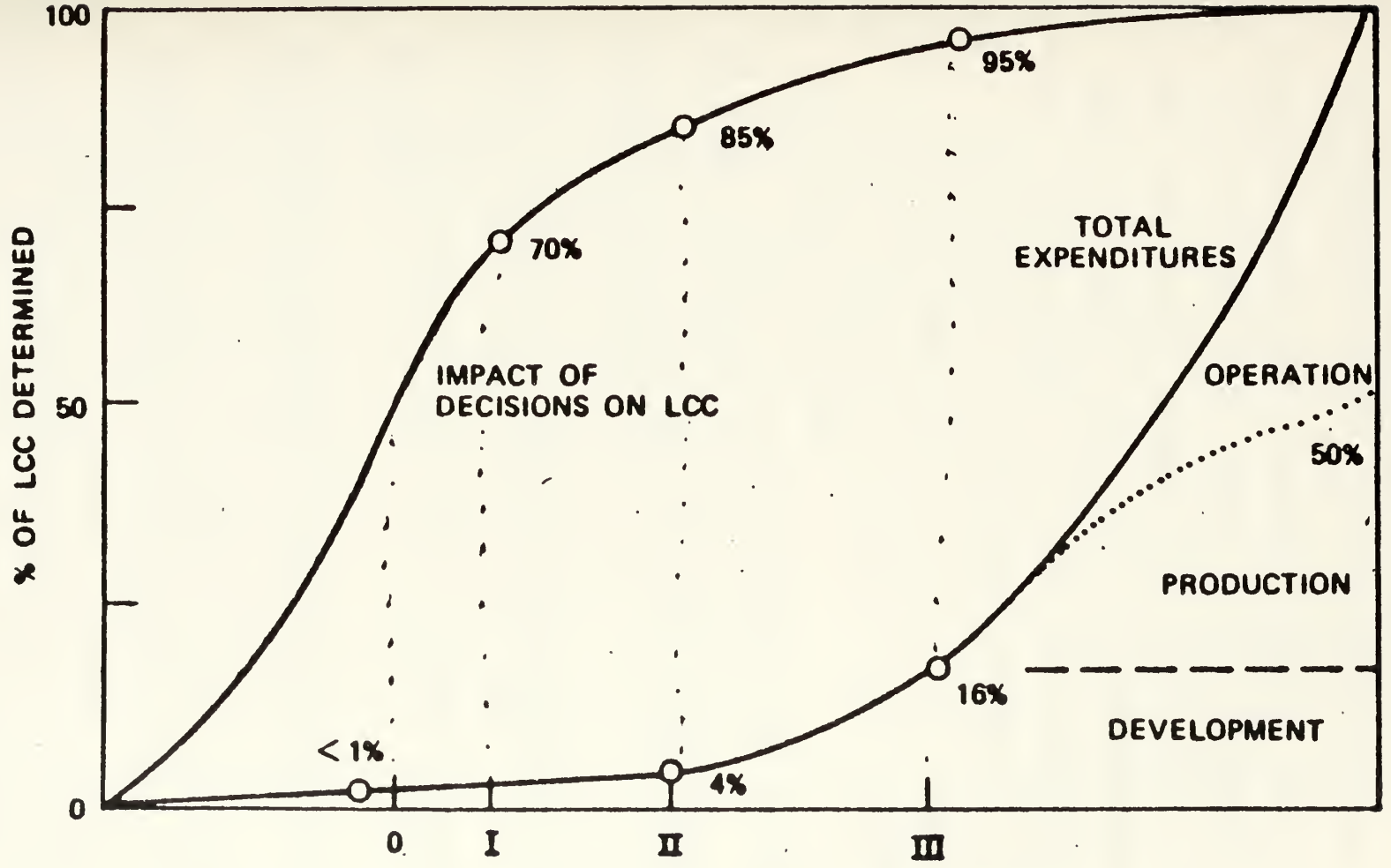


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Figure 2.8 **System Life Cycle Cost.**

4. Full-scale Engineering Development Phase

This phase is a period of careful, iterative, detailed and, therefore, expensive engineering effort. The final product of this phase is a product baseline configuration design and documentation package which reflect the established cost, schedule, logistic supportability and performance requirements and constraints. The Full-scale Development Phase includes construction of a production prototype and may also include a limited production run for test and evaluation [Ref. 9: 2-47]. The main activities that are performed during this phase are the following:

- The Navy, through the Project Office, must re-evaluate and update the threat and need assessment.
- The systems and equipment and other principal items for production and future support are designed, fabricated, tested and evaluated.
- The PM must conduct a comprehensive review of the acquisition strategy and functional and implementation plans in conjunction with a review of the SDDM.
- The acquisition strategy must be adjusted to accommodate any specific instruction from the SECDEF, SECNAV, CNO or CNM.
- Development and operational test and evaluation of the pre-production prototypes must be performed to determine whether the product meets its specifications.
- The Integrated Logistic Support Planning effort is intensified to assure a suitable input to the design evolution process and resultant supportability.

In addition to the normal review and checks, some areas require special attention to assure a smooth transition to the next stage called Production and Deployment. Special

attention is given by the PM to areas of manufacturing methods, production risks, establishment of requirements for configuration control, indication of long-lead time procurement, careful review of the design documentation package, and initiation of such other actions necessary to facilitate transition to initial volume of production. Particularly important for the PM is the review of the facilities that the Navy will use to support the system and verify that any new facilities, personnel and personnel training required are adequate and will be available on time.

At the end of this Phase (Milestone 3), the DCP and IPS are again updated and submitted to DSARC. The DSARC reviews and recommends approval of the system, determining whether or not, to proceed into the final phase of the acquisition process of a major system, the Production and Deployment Phase.

5. Production and Deployment

Efforts in this phase are directed toward providing and maintaining the desired operational capability and inventory. Production of hardware, systems deployment and the establishment of fleet support will be accomplished through the plans already prepared by the program team and approved by higher authority. The production activity starts with the approval to proceed at Milestone 3 and continues until the last unit of the system is delivered and accepted. The Deployment activity begins with the acceptance of the first

operational system and continues until the system is phased out of the military inventory.

With regard to naval ships as a major defense system, planning for the smooth phase-in of a new ship class and phase-out of the old should be undertaken several years prior to actual commencement of deployment. The need for careful planning cannot be overstated, particularly in regard to the training of required personnel and the establishment and proper placement of system logistic support.

It is appropriate to consider that seldom will the first production design of a warship prove to be fully satisfactory. Changes in the threat, tactical interactions or new technological achievements may have occurred too late during the system development to be incorporated in the original design. For this reason, a Pre-planned Product Improvement Plan (PPPI) should be considered in order to include all the improvements which the ongoing development and production program could not incorporate originally.

There exists in the U.S. Navy acquisition cycle relevant aspects, positions, activities, participants (agencies, organizations and individuals), and documents whose functions and actions must be considered in order to be taken as reference points for the development of the attempted acquisition strategy for the Venezuelan Navy focused in this thesis. Such relevant topics as the following should be the subject of special attention:

1. The Program/Project Manager who is the central figure in the entire acquisition process management, in conjunction with the Program Manager's Charter establishing him as the individual ultimately responsible and accountable for success or failure of the program.

2. The establishment of the Mission Element Need Statement (MENS) and its continuous influence throughout the whole process.

3. The existence of five acquisition phases well defined in conjunction with four decisions milestones.

4. The establishment of the Baseline Plan and measurement of progress as focal points to the effective management of the program.

5. The contracting activities at different stages in order to carry out the related actions, with the PM assigning responsibilities for various portions of the project to organizations outside the Program Manager Office.

6. The Source Selection task which is one of the most important activities because decisions taken regarding this subject have vital influence on the rest of the process.

7. Cost Management and Life Cycle Costing (LCC), which will be emphasized in Chapter V because of its relevance in Venezuelan Navy acquisition environment.

8. Provided that the naval ships the program acquired respond appropriately to criteria of reliability, maintainability and availability, a great importance will be given to the logistic supportability, naval standardization and safety.

9. Another aspect which has to be considered from this process is the Documentation Package as the end product of an acquisition program for any major system in general, and for a naval ship in particular.

In spite of the fact that Technology Transfer has not been considered in the acquisition process already exposed, it is a subject of crucial importance for the implementation of the Venezuelan Navy acquisition strategy to be proposed in Chapter V.

E. RELEVANT TOPICS OF THE U.S. NAVY SHIP ACQUISITION PROCESS

In order to illustrate some relevant aspects of the U.S. Navy ships acquisition process corresponding with the purpose of this thesis, the Guided Missile Destroyer DDG 51 Class acquisition program will be used where appropriate. In a similar way the "Mariscal Sucre" Frigate Class acquisition program will be used to illustrate the Venezuelan Navy ship acquisition process.

1. Five Year Defense Program (FYDP)

The Five Year Defense Program (FYDP) of the U.S. has its foundation in the Planning-Programming-Budgeting System (PPBS). PPBS can be summarized in a few words. Based on the anticipated "Threat", a "Strategy" is developed to meet the threat. In support of that strategy, force "Requirements" are determined. These requirements generate "Programs" to provide, on an orderly basis, for the development and production of ships, aircrafts, weapon systems and manpower over a period of time. Finally, funds must be "Budgeted" in such manner as to acquire and sustain the required forces and weapon systems within the resources that the nation provides.

Implicit in the process outlined so briefly above, are the development of mid-range objectives, the conduct of special studies, and research and development of weapon systems and their support. In fact, all the resources of the services are drawn upon to formulate their plans, programs and budgets.

The U.S. Navy Shipbuilding Program is extremely complex because of the acquisition of a variety of multiple kinds of ships from huge nuclear aircraft carriers and sophisticated submarines to small auxiliary and patrol craft [Ref. 11: 3]. The foundation for this program is the Five-year Shipbuilding Plan, in which the Navy requests to Congress (as approved by SECDEF and the President) funds for the naval ships believed necessary to accomplish assigned missions.

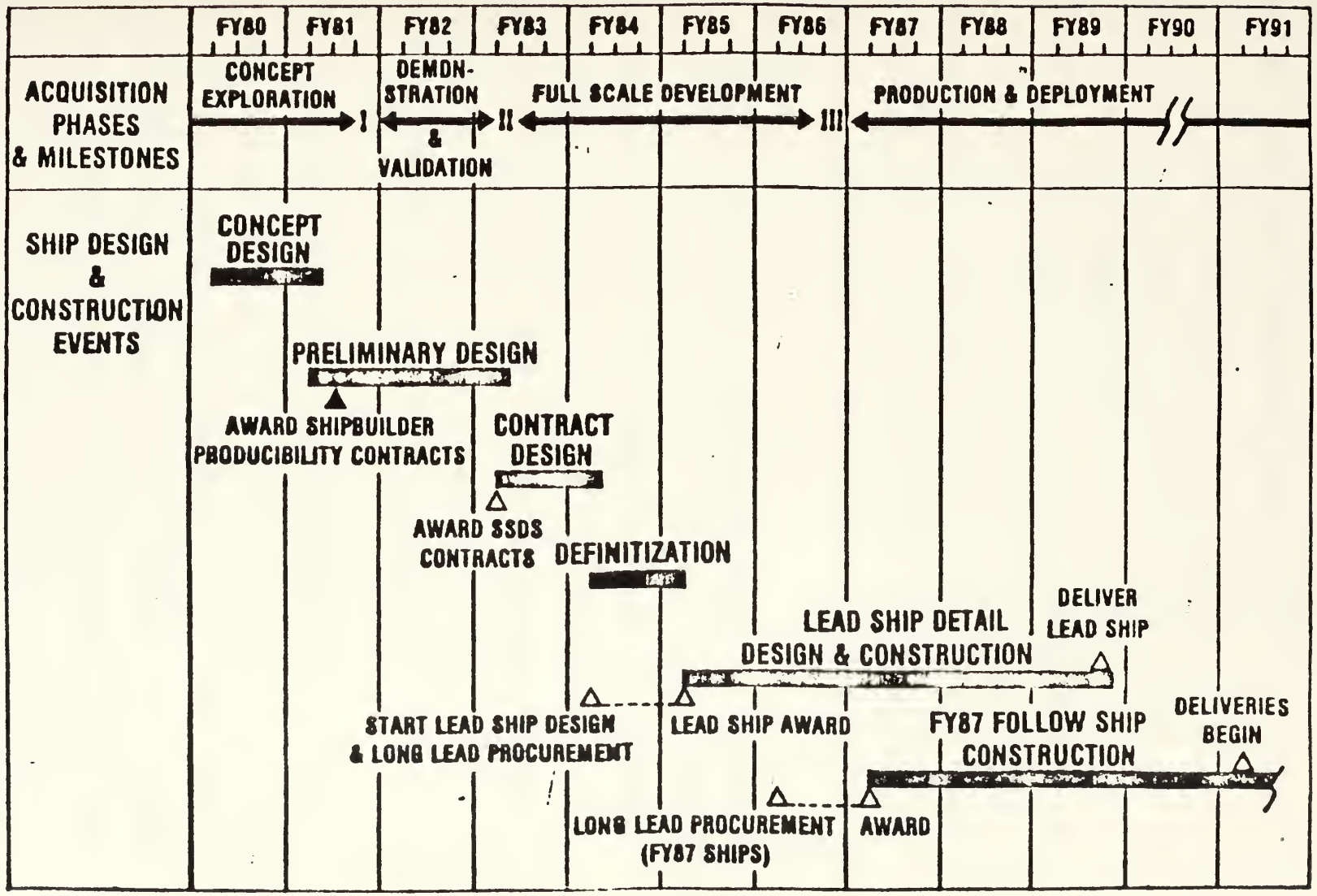
This Five-year Program is updated annually as part of the budget submission by the President. It includes a breakdown of the number of ships by type and cost and delivery estimates for the total package including all government furnished equipment (GFE).

The Shipbuilding Plan is developed by consideration of the size and mix of the ships deemed necessary, the funding requirements and the ability of the shipbuilding industry to meet the program.

The new Guided Missile Destroyer 51 Class (DDG 51) Program was established in its Master Program Schedule (Fig. 2.9) in fiscal year 1980 with the initiation of the Concept Exploration Phase. This is being continued with a Demonstration and Validation Phase to be conducted in fiscal years 1982 and 1983, leading toward Full-Scale Development in fiscal year 1984 and part of 1985, to conclude in fiscal year 1985 with the award of a contract for the lead ship.

DDG 51 MASTER PROGRAM SCHEDULE

(FY85 LEAD SHIP AUTHORIZATION)



Source: Ref. 12

Figure 2.9

A Program Decision Memorandum (PDM) issued on 23 August 1980 project for DDG Class Program one ship in FY85, one in FY86, three in FY87, and approximately five in each fiscal year through FY96 for a total of approximately 49. [Ref. 12]

2. Operational Requirements

One of the aspects that has been emphasized in the U.S.N., relating to one of the objectives of this thesis is the relationship of Development Cost to System Life Cycle, based fundamentally on the establishment of the need and subsequent determination of operational requirements to meet this need.

Fig. 2.8 shows that approximately 70% of a system life cycle cost is predetermined by the end of the conceptual phase. However, at the point when the concept is chosen, only a small percentage of the total system cost has been expended. A little more money spent in the early stages of the program to currently define the system requirements can save a great deal of money over the life of the system. [Ref. 9]

In a study developed by the Acquisition Advisory Group (AAG) in April 1975 [Ref. 13], it was found that there was a need to formalize the structure of the "Front End" of the system acquisition process to tie together in a continuous track the determination of mission deficiencies, the evolution of acceptable systems to satisfy the need. As shown in Fig. 2.5, the system acquisition cycle should be

originated as a result of interactions between technological inputs, operational needs, and cost constraints (affordability).

Of critical importance to the development of an effective and economical system to meet the operational need are Requirements Determination analysis effort which must take place in the conceptual and definition phases of the system life cycle. In concept, all systems are developed in response to perceived needs, and system operational requirements are determined as a result of analysis of these needs. In a general way, system acquisition within the Department of the Navy (DON) begins when a mission need (threat) or deficiency is recognized and a MENS is approved. The Office of the Chief of Naval Operations (OPNAV) issues an Operational Requirement (OR) during the conceptual phase after the need has been analyzed and system approaches to meet the need has been identified and analyzed. The OR is the basic requirements document for all acquisition program requiring research and development efforts.

The DDG 51 ship acquisition program was initiated with the CNO Memorandum 00/C500267 of 24 May 1978, requesting a DDX study to define a battle force capable surface combatant(s) as replacement for obsolescent battle force cruisers and destroyers. As a result of this DDX study, CNO requested CNM to conduct design studies of alternative battle force combatants which will meet the 1990s and out-year force level requirements by replacing aging cruiser and destroyer assets.

[Ref. 12]. In this specific case, the need had been generated by obsolescence and the analysis of operational requirements led to the conception of the naval ship DDG 51 Class, the next in a long line of highly capable destroyers for the U.S. Navy.

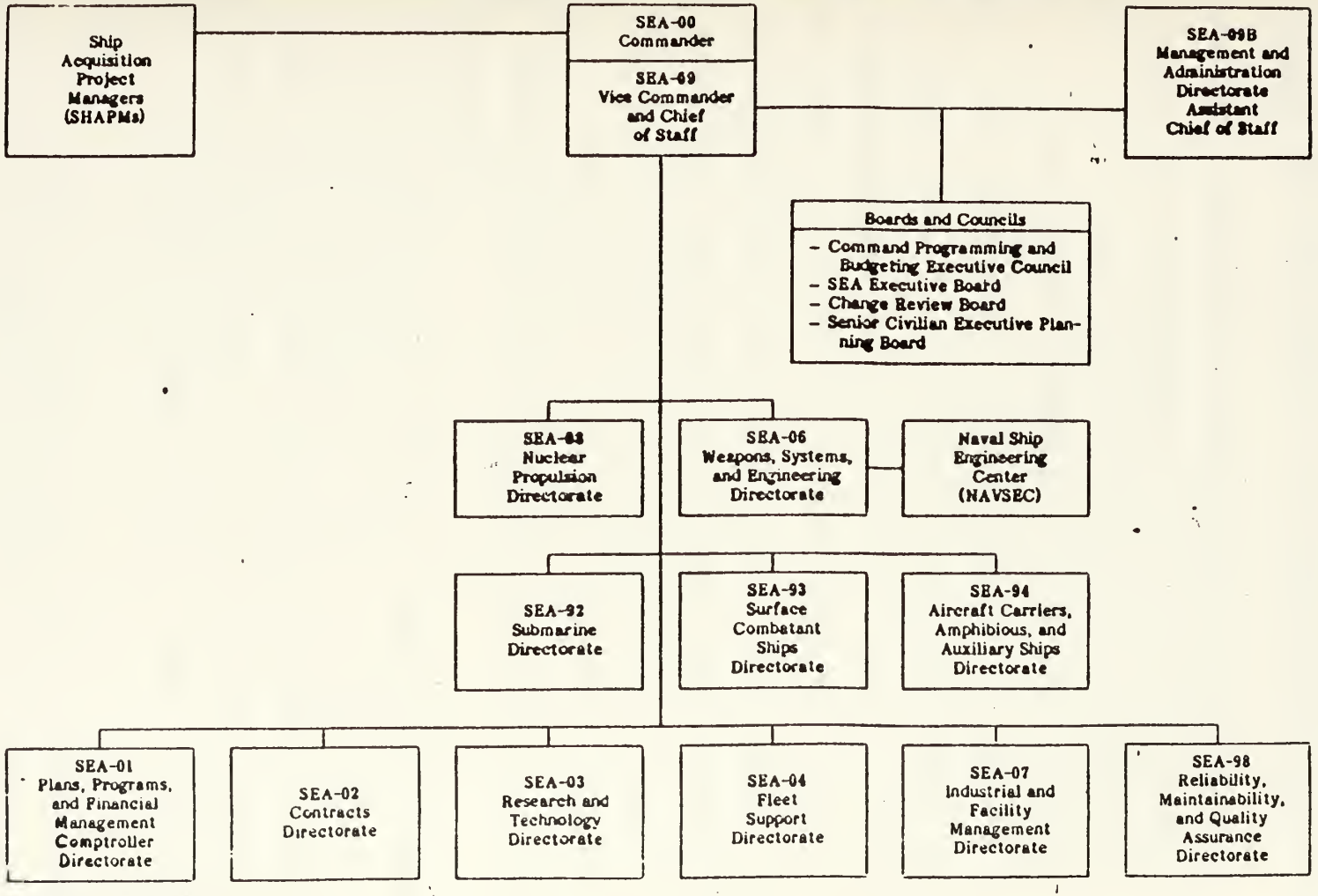
3. U.S. Naval Ship Acquisition Process

The U.S. naval ships acquisition process begins on the approval by the Secretary of Defense of a MENS and funding by Congress of the Five-year Shipbuilding Program. Several organizations become involved in this process such as the Secretary of the Navy (SECNAV), the CNO and the CNM. The Assistant Secretary of the Navy for Manpower, Reserve Affairs and Logistics is designated as the Shipbuilding Acquisition Executive (ASN/MRA&L) but the major responsibility is assigned to the Commander, Naval Sea System Command. (Fig. 2.10) [Ref. 11: 39]

A Ship Acquisition Program Manager (SHAPM) is assigned at Milestone 0 (approval of the MENS) and has the responsibility for providing fleetworthy ships to the operating forces or designated recipients, fully supported and according to the requirements and schedules as expressed by the CNO. [Ref. 14: 90] A Project Office is set up, the organization and staffing is dependent on the particular project.

The Ship Acquisition Program Manager (SHAPM), the Contract Directorate and the Naval Sea Engineering Center (NAVSEC) are assigned, within NAVSEA, major responsibilities

ORGANIZATION OF THE NAVAL SEA SYSTEMS COMMAND (NAVSEA)


Ship Acquisition Project Managers (SHAPMs)
SEA-00 Commander
SEA-09 Vice Commander and Chief of Staff
SEA-09B Management and Administration Directorate Assistant Chief of Staff
Boards and Councils
- Command Programming and Budgeting Executive Council
- SEA Executive Board
- Change Review Board
- Senior Civilian Executive Planning Board
SEA-08 Nuclear Propulsion Directorate
SEA-06 Weapons, Systems, and Engineering Directorate
Naval Ship Engineering Center (NAVSEC)
SEA-92 Submarine Directorate
SEA-93 Surface Combatant Ships Directorate
SEA-94 Aircraft Carriers, Amphibious, and Auxiliary Ships Directorate
SEA-01 Plans, Programs, and Financial Management Comptroller Directorate
SEA-02 Contracts Directorate
SEA-03 Research and Technology Directorate
SEA-04 Fleet Support Directorate
SEA-07 Industrial and Facility Management Directorate
SEA-98 Reliability, Maintainability, and Quality Assurance Directorate

Source: NAVSEA.

Figure 2.10

during the ship acquisition process, supported the functional directorates.

F. ROLE OF THE SHIP ACQUISITION PROGRAM/PROJECT MANAGER (SHAPM)

The Ship Acquisition Program/Project Manager is the central figure for the management of the naval ship acquisition process. He is the individual delegated to handle the process from an overall project management viewpoint. In order to do that, the SHAPM needs to develop a broad range of management skills. Many of these skills will have their focus in the program management organization and support activities, but certain ones must reside in the SHAPM himself.

The SHAPM is the first advocate for his program. He must completely understand the military need for the system and must become intimately familiar with the system as it evolves. Besides this he must understand that he alone is held responsible and accountable for the success or failure of the project.

Such functions as risk analysis, configuration management, ILS, plans and change management are the responsibility of the SHAPM. He directs and controls the actions of various functional organizations in providing necessary supporting input to the project through a group of Ship Project Directives (SPDs).

A naval ship is a complex integration of many systems, some of which are developed concurrently with the ship design.

To carry out this task, it is mandatory that the project manager for these component systems continuously keep the SHAPM informed on the different aspects that will affect the program. SPDs form a "contractual" document between the SHAPMs and the participating managers (PARMS) at different levels.

A participating manager is the head of an organization within DoD, responsible for providing to the SHAPM shipborne systems or components, computers, programs, and engineering, technical or management support in those areas assigned by the System Commands, CNM-designated projects or other DoD activities [Ref. 14:83]. This is necessary to get an adequate budget to start building the project. Thus, adequate staffing and budgeting are certainly critical to project success.

The primary emphasis on which type of individuals and what areas of expertise are most important varies considerably with the kind of basic management documentation. This staff includes positions such as: Contracting Officer, a Business/Financial Manager, a Logistics Manager, a Technical Manager/System/Engineering and, depending on the size of the project, an Assistant Project Manager. (Fig. 2.11)

1. The Ship Acquisition Program/Project Management Documents

The most important documents, for the purpose of this thesis, prepared by the SHAPM, are:

1. Ship Acquisition Plan (SHAP) Outline
2. Acquisition Strategy (AS)
3. Project Master Plan (PMP)

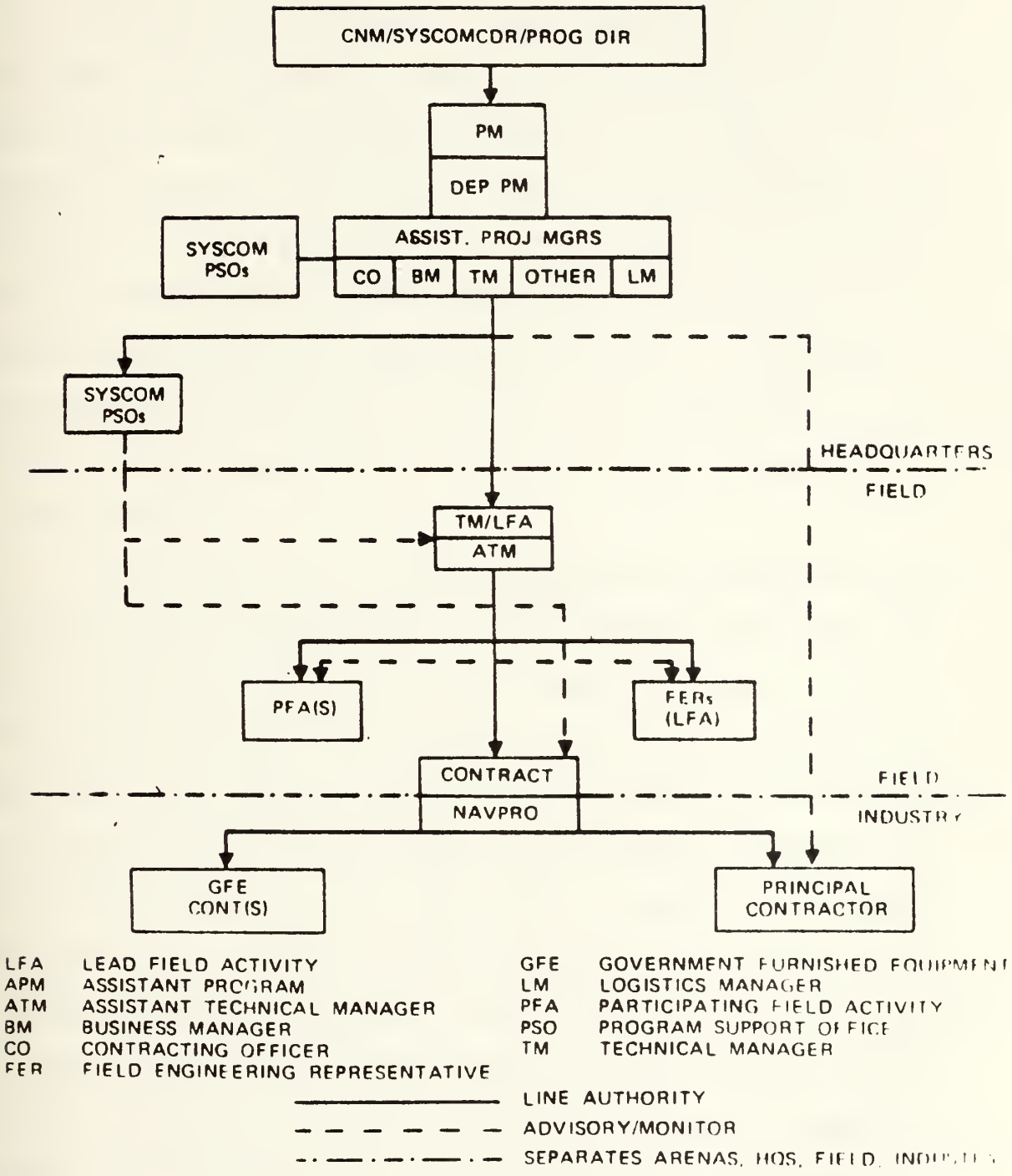


Figure 2.11 Sample Program Manager Organization

Source: Ref. 11

The SHAP Outline is a plan of action and milestones for accomplishing the acquisition objective. This document evolves into the Ship Acquisition Plan as the acquisition process matures and more definitive information becomes available. This document reflects all the data on the project known to date and lays down the dates for all SPDs to be issued to support the project. As the program proceeds, the outline is refined continuously and the Ship Acquisition Plan itself is developed, detailing the plan and strategy to be followed throughout the acquisition process. It reflects the managerial concept for directing and controlling all the elements of the acquisition to meet the goals and objectives of the program.

The Acquisition Strategy Document is developed during the Concept Development Phase. This document describes the acquisition plan for a program and forms the basis for the acquisition strategy discussion in the Decision Coordinating Paper (DCP) and Navy DCP (NDCP). The document evolves through an iterative process and becomes increasingly definitive as the program advances. It covers areas such as ship design and construction, combat systems, design and development, manufacturing and production, test and evaluation, negotiating and contracting, risks, logistics and international programs. Because the focus of this thesis is about a Naval Acquisition Strategy for the Venezuelan Navy, more details on this document and its impact on the entire process will be included in Chapter V.

The Project Master Plan (PMP) is used to provide uniform guidance for work planning and scheduling, and provide basic documentation which coordinates NAVMAT effort for specific projects. The project Master Plan is a compilation of planning documents that places in context the plans, schedules, costs, and scope of all work and resources to be provided by each participating organization. It defines a management approach for acquiring a system intended to satisfy the approved statement of need. The PMP extends project objectives by emphasizing planning for production and Fleet introduction through Fleet deployment and support.

The Acquisition Strategy for the DDG 51 Acquisition Program was issued in February 1981. It is a document of 21 pages prepared for the Program Manager and approved by the Chief of Naval Material.

Other documents that have to be considered are the Top Level Requirement (TLR), the Top Level Specifications (TLS) and the Ship Logistic Management Plan (SLMP). The TLR defines the operational requirements of the ship to be produced, stipulates the maximum costs and identifies all other constraints affecting the project. It results from an interactive process between CNO and CNM.

TLS is a document promulgated by NAVSEASYSCOM which translates the TLR into a physical ship description, providing a bridge between the contract specifications that will be developed for the procurement of the ship.

Finally, during the Shipbuilding and Conversion Period, the SHAPM identifies and provides for logistic support planning. An early Ship Logistic Management (SLM) involvement is necessary to provide a smooth transition of implementation planning for Integrated Logistic Support, and related disciplines that will properly support the ship in the post shipbuilding conversion phase. This activity is accomplished for the SHAPM preparing the last management document to be considered here, which is called Ship Logistic Management Plan (SLMP).

G. NEGOTIATION AND CONTRACT MANAGEMENT

1. Source Solicitation and Proposal Evaluation

Negotiation and Contract Management is one of the most difficult activities of the entire naval ship acquisition process. This period in the acquisition cycle of the system begins with the Source Solicitation and Proposal Evaluation. The solicitation will describe the mission element need in terms of the minimum acceptable performance goals, the anticipated operational environment, MIL-SPECS of required interfaces, and the criteria by which the proposal will be evaluated. It is mandatory that the evaluation criteria, the data requirement and data format be included in the solicitation. The response to the solicitation should identify items, designs or components that the contractor consider proprietary or sole sources [Ref. 9: 29]. The evaluation criteria should

be flexible enough that they can be applied to the most diverse alternative concepts and yet they must be sufficiently structured to permit equitable evaluation to all proposals.

Proposals in response to the Request for Proposal (RFP) are evaluated by the SHAPM in accordance with the approved source solicitation plan. The number of awarded parallel short-term contracts for the alternative concept evaluation period will depend upon the program budget constraints, the quality of the proposals, and the acquisition strategy. The SHAPM should avoid the urge to reduce his front-end expenditure of time and money at this time, since such reductions may lead to a combination of higher costs and lower performance levels in later stages. As mentioned earlier, the decisions made in this phase may determine 70% of the total life cycle cost. It is much less expensive to maintain competition during the concept development phase than in the engineering development and production phases. After the most promising concepts have been selected from among the responses to the solicitation, parallel short-term contracts for further study may be awarded.

2. Contracting

This subsection addresses the management of the U.S. Navy Ship Construction Contracts--a process which begins with the award of a contract to a shipbuilder. The contract establishes the relationship between Government and the industry. It must define the objectives, responsibilities, and authority

of each party, and provides positive control with adequate flexibility for timely modifications.

In the U.S.N. acquisition environment, procurement planning is the total management approach for acquiring a project or system to meet an approved requirement. The Procurement Plan (PP) is the document which serves as the principal long-range contractual planning document for the DoD Five-year Defense Program and the Navy Program Objectives Memoranda [Ref. 15: 4-1]. On the other hand, the SHAP covers the management plan, financial plan, ILS plan, and major milestones in the acquisition cycle and in the performance of the contract.

Construction of naval ships involved a large number of management tasks. Figure 2.12 sets forth a partial listing of the areas of contract management that requires communication between the U.S. Navy and the shipbuilders after contract award.

As relates to technical management, business management and administrative management, it is clear that the Navy involvement covers virtually the full spectrum of management disciplines.

a. The U.S. Navy Management Contract Organization

As previously seen in Fig. 2.10, the major responsibility for contract management within the Navy organization rests with the Contracts Directorate. In order to oversee all ship construction efforts, NAVSEA has established

AREAS OF NAVY/SHIPBUILDER CONTRACT MANAGEMENT INVOLVEMENT

Technical Management	Business Management	Administrative Management
– Specification Interpretation	– Planning/Scheduling	– Equal Employment Opportunity
– Design Approval	– Make/Buy Plans	– Material Management
Process Qualification	– Subcontract Review	– Physical Security
– Government-Furnished Data	– Property Administration	– Safety
– Government-Furnished Material	– Progress Measurement	– Small Business Program
– Value Engineering	– Overtime Review	– Radiological Controls
– Deviation Approval	– Subcontractor Performance	– Nucleus Crew Management
– Quality Assurance	– Productivity	– Visitor Control
– Testing and Trials	– Claims Avoidance	– Public Information
– Product Acceptance	– Change Management	
	– Claims Administration	
	– Insurance	
	– Payments	

Source: Ref. 11

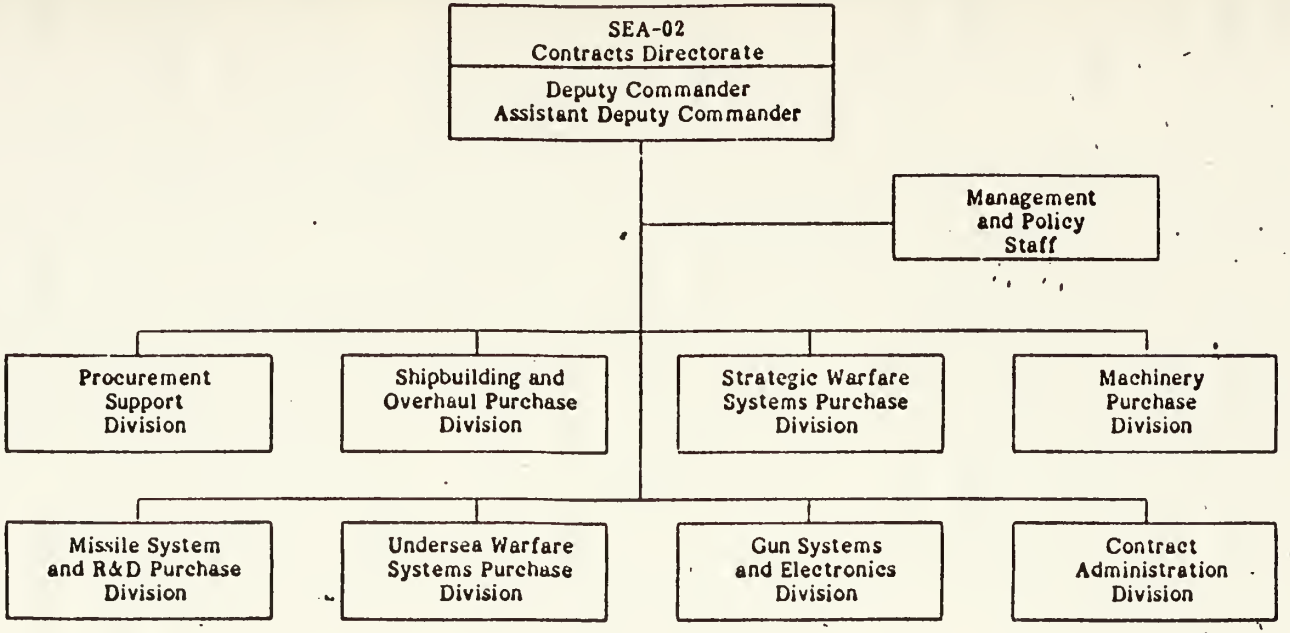
Figure 2.12

the SHAPM as the coordinator of all Navy actions relating to specific ship construction program and the supervisor of Shipbuilding (SUPSHIP), located at each shipbuilding site, as the focus of all actions dealing with a specific shipbuilder. Within this framework, other NAVSEA organizations interact with the shipbuilder in their respective functional areas (Fig. 2.13).

A number of the policies by which the SHAPM exercises authority appear in various SPDs. The policies and procedures by which shipbuilding contracts are managed are set forth in the Ship Acquisition Contract Administration Manual (SACAM) [Ref. 15]. In addition to specific guidance, the SACAM sets the tone for U.S.N. shipbuilding contract administration. Active involvement with the shipbuilder is prescribed by the SACAM to assure that U.S.N. interest and shipbuilding management concern are protected and that decisions are made on the basis of full, factual knowledge of the circumstances [Ref. 11: 186].

There are two interdependent facets to the contracting process that are given special attention by the contracting organization--the legal and the technical. The chief legal representative in the team is the Contracting Officer (CO). He is the official government representative in the contracting process. He is the one empowered to sign contracts, and only he can authorize contract changes. While the SHAPM is responsible for the results of the contract

ORGANIZATION OF THE NAVSEA CONTRACTS DIRECTORATE



Source: NAVSEA.

Figure 2.13

effort, the Contracting Officer (CO) is responsible for assuring that all the contract associated actions are legal.

On the technical side, the SHAPM may draw from his own staff or from functional groups in Systems Command (SYSCOM) to obtain the specialized assistance he may need. The number and types of specialists called for can vary with the scope and phase of the program, but they could include system engineers, experts in specific technologies, specialists in areas such as reliability and maintainability, logistic support, configuration management, production engineering, and documentation, as well as fiscal and administrative personnel as appropriate.

The Negotiation and Contracting process in the DDG 51 program indicates that at the beginning of contract design, which is during the full-scale development phase of the DDG 51 acquisition cycle, two shipbuilders will be awarded Ship System Support (SSDS) contracts through a competitive source selection process.

Some factors to be used in the source selection process leading to SSDS contracts include: approach to detail design and construction, management and work force capability, procurement approach, facilities and previous experience. The acquisition strategy for this program also establishes that the SSDS shipbuilders will be intimately and continuously involved with the NAVSEA design team leading to the establishment of the Contract Design Baseline which will include DDG

51 ship specifications, tailored as appropriate. The purpose of selecting two shipbuilders is to broaden shipbuilder participation to encourage the competition for lead ship and follow ship contracts.

H. CHAPTER SUMMARY

This chapter described the U.S. Department of Defense Major System Acquisition Process, giving special attention to the most important procedures, organizations, individuals and documents in the acquisition of naval ships considered as a major system. The procedures are based on the requirements of OMB Circular A-109, which have been incorporated into DoDD 5000.1 and DoDD 5000.2 to reflect the specific needs and policies of the Department of Defense. These directives emphasize the establishment of a Project Office and the concept of decisions milestones points during the acquisition process. The Project Manager, who is called Ship Acquisition Program Manager for the purpose of naval ship acquisition, is the central figure in the management of the entire process. He is appointed early in the acquisition cycle and develops certain documents enabling him to control, direct and monitor the progress of the process.

Relevant topics of the U.S.N. naval ships management acquisition process are the Five-year Shipbuilding Plan, Operational Requirements, the functional and structural organizations of the U.S.N. relative to the topic, the Role of

the Program/Project Manager and the Negotiating and Contracting activities. The Guided Missile Destroyer DDG 51 Class acquisition program has been used as a reference point and the Ship Acquisition Contract Administration Manual (SACAM) has been consulted to show how the ship acquisition contracts are administered in the U.S. Navy environment.

In the next chapter the Venezuelan Navy Acquisition Process will be described in order to allow a comparison with the U.S. Navy Acquisition Process in Chapter V.

III. THE VENEZUELAN NAVY ACQUISITION PROCESS

A. MISSION OF THE VENEZUELAN NAVY

Venezuela's Constitution proclaims the principles of national independence, security, peace and stability. It advocates international cooperation, democracy and self-determination of peoples and repudiates war, conquest and economic predominance as instruments of international policy.

National sovereignty is asserted over all the land and airspace, and over the territorial sea three nautical miles from the coast plus an additional nine-mile contiguous zone on the continental shelf.

The legal instrument to assure and to warrant the national defense is, according to article 132 of the Constitution, the Armed Forces; made up of the Army, the Navy, the Air Force, and the National Guard. These have been created by the state to protect its citizens and the inviolability of the national territory [Ref. 16]. In the broadest context of the Venezuelan Armed Forces, the Navy has been assigned the following mission:

> "To guarantee the national sovereignty in the maritime frontier, in the Venezuelan territorial sea and rivers and lakes zones exercising control of the contiguous zone and continental shelf with the purpose of contributing, with the other Forces, to the national defense, the stability of the democratic institutions, and the respect for the Constitution and laws of the Republic."

Actually, the nature of Venezuela's political and economic interests inevitably brings other subject into focus. The

country greatly depends on the seas for the bulk of its external commerce. At least where the Nation proclaims sovereignty it should be able to exert it. The freedom of communication on the Caribbean Sea and the Atlantic zone contiguous to Venezuela's coast is essential to the country. The nation has been vitally interested in this matter, and its Navy, with conventional, but modern, forces has played its role with a peaceful and quiet performance.

The Venezuelan Navy has deployed to the sea, not only to protect its lines of communications, but also for regional cooperation with other American nations. In support of the allied cause the VN has contributed to the free traffic and protection of communication lines on the Caribbean Sea with other American navies, including the "Quarantine Patrol" of Cuba in 1962 [Ref. 17: 29].

B. STRUCTURE OF THE VENEZUELAN NAVY ACQUISITION PROCESS

The goal of the Venezuelan Navy (VN) acquisition process for naval ships is to equip the Navy to assure a naval capability superior to that of any potential enemy. But such a statement is too general to be useful. Superiority must be translated into how many of what defense systems are to be developed and procured. Complex issues, ranging from the present and projected capabilities of potential enemies to the role of the VN, are explicitly interwoven with the naval ship acquisition process, from determination of needs to

deployment of units in the assigned operational areas with the corresponding logistic support.

Developing countries are not normally capable of satisfying all their military needs through internal manufacturing because of lack of domestic resources. The required combination of large amounts of capital, raw materials, advanced technology and skilled manpower needed for the establishment and operation of defense-oriented industries can rarely be found in developing countries [Ref. 18].

Venezuela is not an exception. As a consequence, in fulfilling its military needs, it depends on acquisition from foreign defense industries which exist in large, well-developed countries. In this way, when a decision is taken to procure defense systems, in this case naval ships, the normal choice is between warships which are in an advanced stage of development or production or have already been produced.

This chapter describes the management process for acquisition of naval ships from countries with shipbuilding industry, as it is presently performed by the Venezuelan Navy. This process has its fundamental basis in the Ministery of Defense (MOD) Directive D-MD-EMC-715-02 issued on June 11, 1975. This directive establishes general policies for the acquisition of defense systems and equipments for the Venezuelan Armed Forces (VAF) [Ref. 19].

In response to this Directive, VN issued the Directive DIR-MA-CGM-0030 which was updated and reissued on February

15, 1978 and now is called DIR-MA-0030-A [Ref. 21]. This Directive establishes policy for the acquisition of naval combatant units, systems and defense equipment and logistic support for the VN in accordance with the requirements of D-MD-EMC-715-02. The new Venezuelan Navy Directive DIR-MA-CGM-0030-A deals with the major system acquisition process in accordance with the acquisition process flowchart shown in Fig. 3.1 [Ref. 20].

C. STAGES OF THE VN ACQUISITION PROCESS

The Venezuelan Navy methodology for the management of the naval ship acquisition process is described in terms of the chronological steps and is developed stage by stage, where the basic stages may be defined as follows: (Fig. 3.2)

- Statement of need
- Operational Requirement
- Technical Requirement Specifications
- Bids/Evaluation
- Project Definition and Contract Definitization

In order to explain the various stages of the acquisition process and to make clear the sequence of the whole cycle, it is necessary to describe the organizational structures of the Venezuelan Armed Forces, and particularly of the Navy.

As can be seen in Fig. 3.3, the Ministery of Defense of Venezuela consist of different staff and executive organizations.

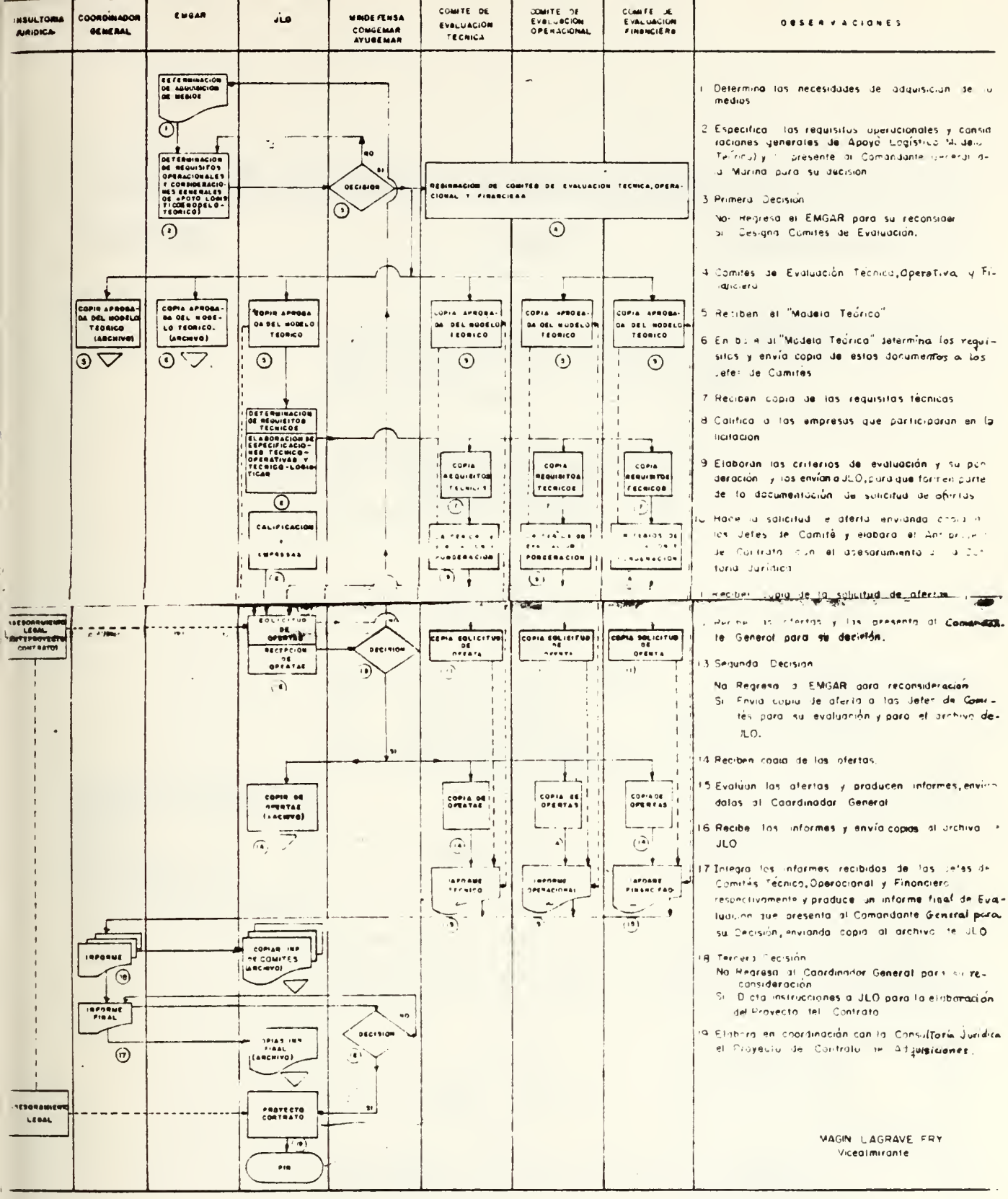

ASESORIA JURIDICA
COORDINADOR GENERAL
EMGAR
JLO
MINDEFENSA CONGEMAR AVIGEMAR
COMITE DE EVALUACION TECNICA
COMITE DE EVALUACION OPERACIONAL
COMITE DE EVALUACION FINANCIERA
OBSERVACIONES
DETERMINACION DE ADQUISICION DE MEDIOS
DETERMINACION DE REQUISITOS OPERACIONALES Y CONSIDERACIONES GENERALES DE APOYO LOGISTICO (MODELO TEORICO)
DECISION
NO
SI
DESIGNACION DE COMITES DE EVALUACION TECNICA, OPERACIONAL Y FINANCIERA
COPIA APROBADA DEL MODELO TEORICO (ARCHIVO)
COPIA APROBADA DEL MODELO TEORICO
DETERMINACION DE REQUISITOS TECNICOS
ELABORACION DE ESPECIFICACIONES TECNICO-OPERATIVAS Y TECNICO-LOGISTICAS
CALIFICACION DE EMPRESAS
COPIA REQUISITOS TECNICOS
PONDERACION
SOLICITUD DE OFERTAS
RECEPCION DE OFERTAS
COPIA SOLICITUD DE OFERTA
COPIA DE OFERTAS (ARCHIVO)
COPIA DE OFERTAS
INFORME TECNICO
INFORME OPERACIONAL
INFORME FINANCIERO
INFORME
COPIAS INF. DE COMITES (ARCHIVO)
INFORME FINAL
COPIAS INF. FINAL (ARCHIVO)
PROYECTO CONTRATO
FIN
ASESORAMIENTO LEGAL
ASESORAMIENTO LEGAL INTERPROYECTO CONTRATO
1 Determina las necesidades de adquisición de los medios
2 Especifica los requisitos operacionales y consideraciones generales de Apoyo Logístico (Modelo Teórico) y lo presenta al Comandante General de la Marina para su decisión
3 Primera Decisión
No Regresa al EMGAR para su reconsideración
Si Designa Comités de Evaluación.
4 Comités de Evaluación Técnica, Operativa y Financiera
5 Reciben el "Modelo Teórico"
6 En base al "Modelo Teórico" determina los requisitos y envía copia de estos documentos a los Jefes de Comités
7 Reciben copia de los requisitos técnicos
8 Califica a las empresas que participarán en la licitación
9 Elaboran los criterios de evaluación y su ponderación y los envían a JLO, para que formen parte de la documentación de solicitud de ofertas
10 Hace la solicitud de oferta enviando copia a los Jefes de Comité y elabora el Anteproyecto de Contrato con el asesoramiento de la Consultoría Jurídica
11 Recibe copia de la solicitud de oferta
12 Recibe las ofertas y las presenta al Comandante General para su decisión.
13 Segunda Decisión
No Regresa a EMGAR para reconsideración
Si Envía copia de oferta a los Jefes de Comités para su evaluación y para el archivo de JLO.
14 Reciben copia de las ofertas.
15 Evalúan las ofertas y producen informes, enviándolas al Coordinador General
16 Recibe los informes y envía copias al archivo de JLO
17 Integra los informes recibidos de los Jefes de Comités Técnico, Operacional y Financiero respectivamente y produce un informe final de Evaluación que presenta al Comandante General para su Decisión, enviando copia al archivo de JLO
18 Tercera Decisión
No Regresa al Coordinador General para su reconsideración
Si Da instrucciones a JLO para la elaboración del Proyecto del Contrato
19 Elabora en coordinación con la Consultoría Jurídica el Proyecto de Contrato de Adquisiciones.
WAGIN LAGRAVE FRY
Vicealmirante

Figure 3.1 Venezuelan Navy Acquisition Process Flowchart

Reference: Venezuelan Navy

STAGES IN VN NAVAL SHIPS ACQUISITION PROCESS

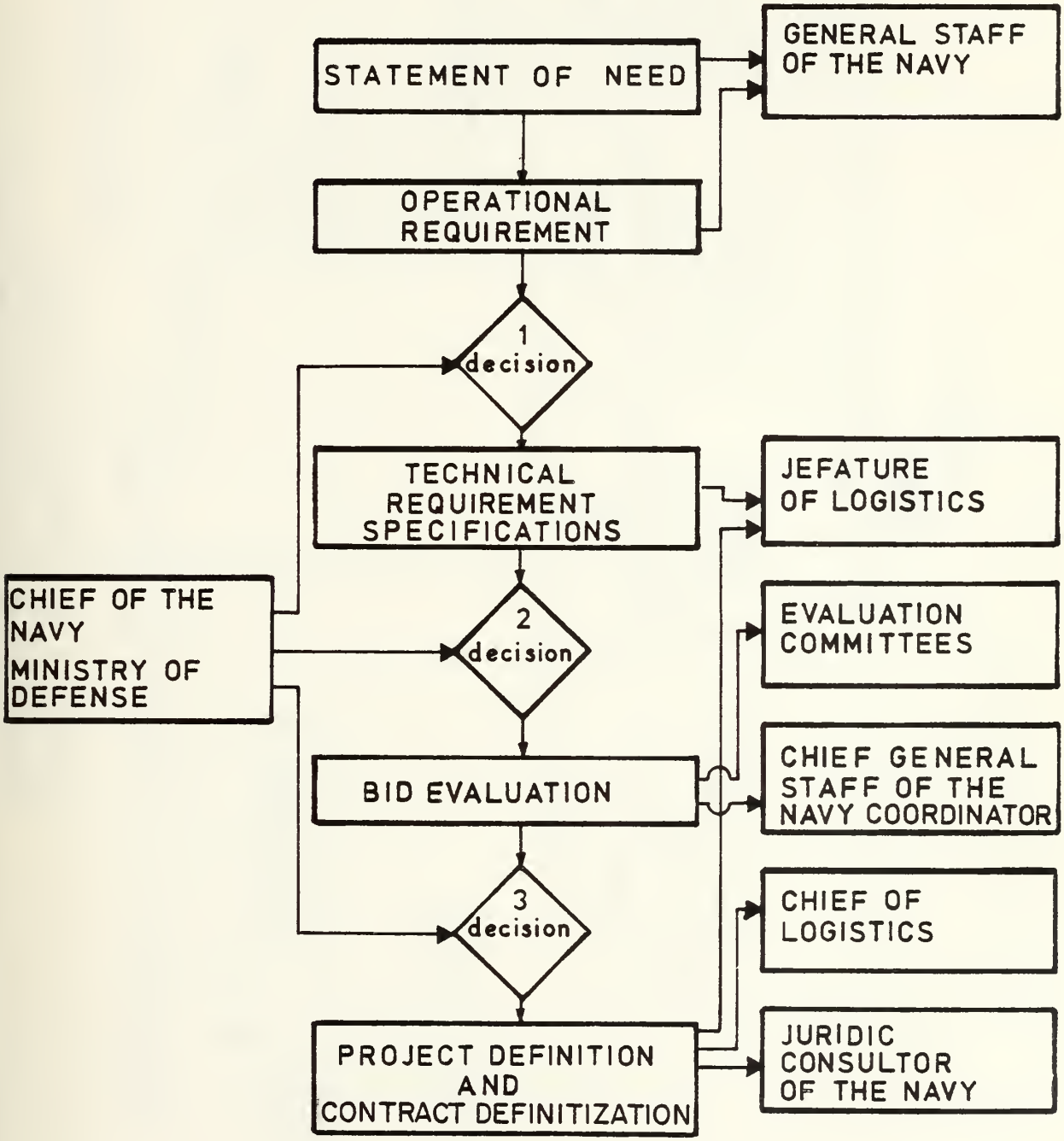


FIGURE 3.2

Source: Prepared by the author

VENEZUELAN ARMED FORCES
MINISTERY OF THE DEFENSE ORGANIZATION

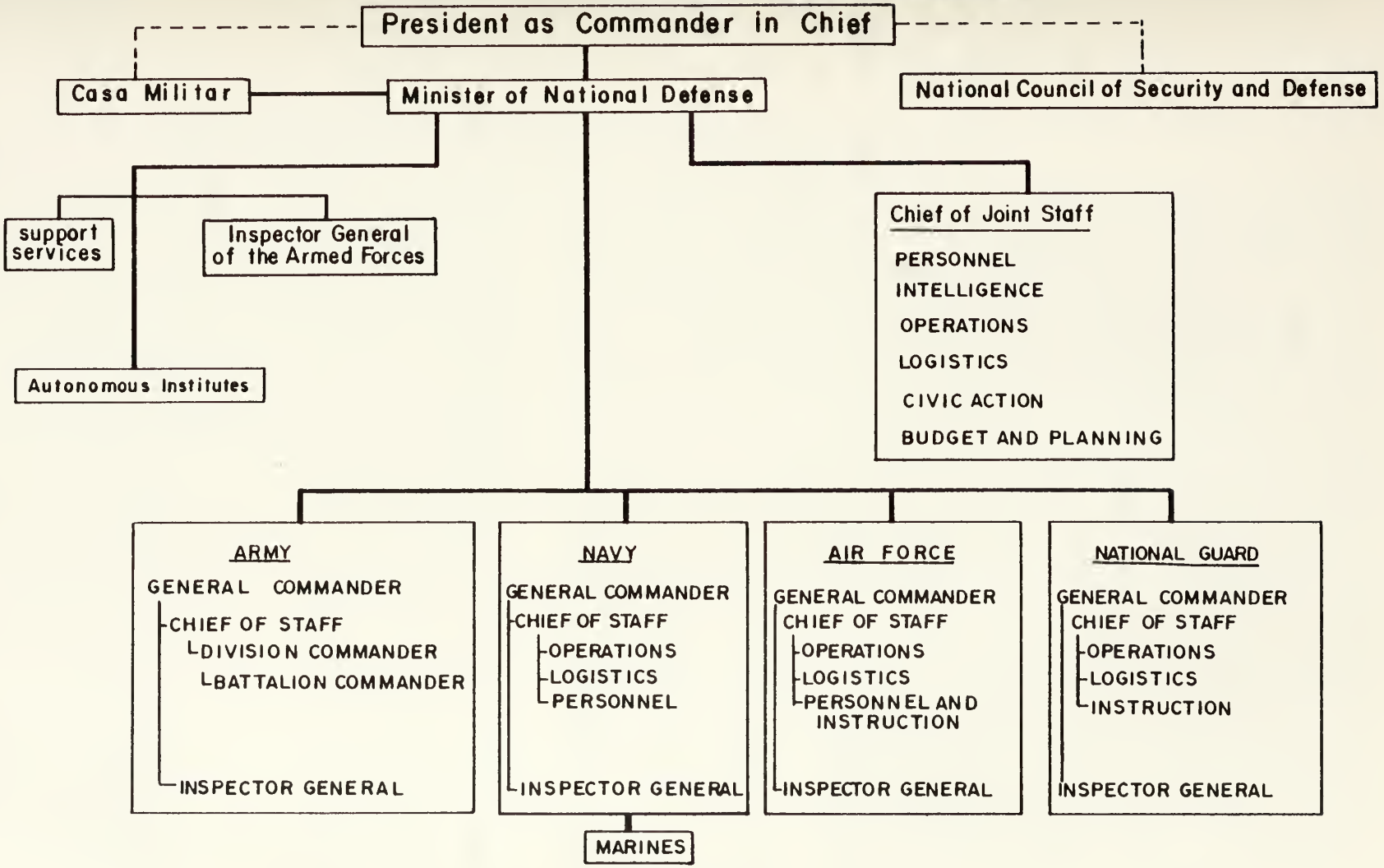


FIGURE 3.3

Ref: Ministery of the Defense
Venezuela

For the purpose of this thesis, attention is given to the Ministry of Defense (MOD), the Minister of Defense (MD), the Joint Chief of the Staff, the Superior Junta of the Armed Forces (an advisory group to the Ministry of Defense, which according to law is consulted when acquisition of defense systems is considered), the General Directorate of Administration which includes the Directorate of Contracts, and finally, the organization for the four services (called Forces). These Services are the Army, the Navy, the Air Force and the National Guard which has been assigned specific functions in internal security, customs, forestry and highway patrol.

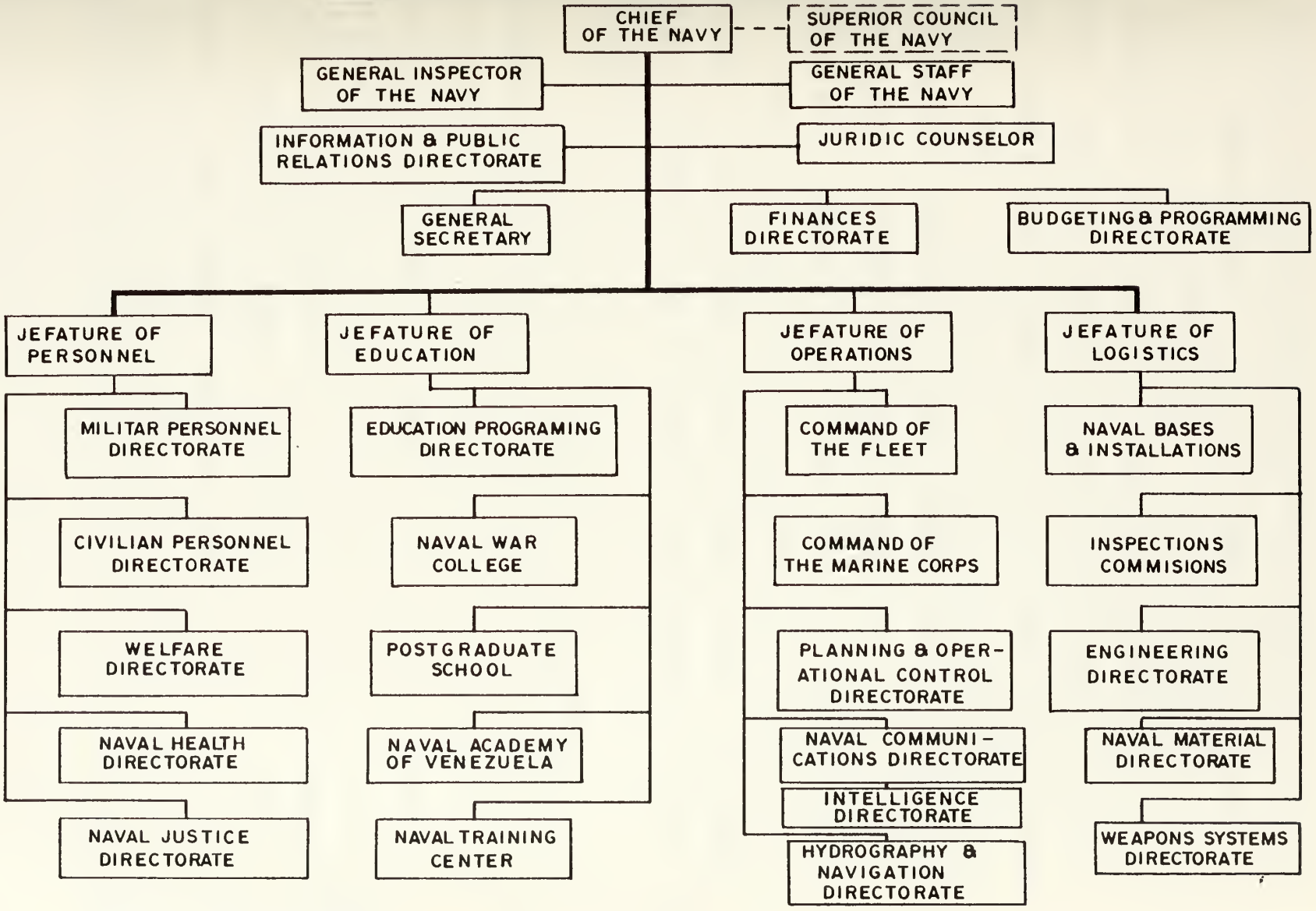
Fig. 3.4 illustrates the structural organization for the Venezuelan Navy. It includes relevant organizations such as the Chief of the Navy, the General Staff (GSN), the Juridic Consultor and four Jefatures: Personnel, Education, Operations and Logistics.

Most of the responsibilities in the naval ship acquisition process are assigned to the General Staff of the Navy and to the Jefature of Logistics. Nevertheless, there does not exist in the VN an organization directly charged with the negotiation and contracting activities.

1. Statement of the Need

In the VN, the need for the acquisition of naval ships may be generated for any of the following three reasons: because the existing inventory is becoming obsolete, as a result of a new threat, or as result of new technology. The

ORGANIZATION OF THE VENEZUELAN NAVY



SOURCE: VENEZUELAN NAVY

FIGURE 3.4

strategic areas assigned to the VN are analyzed constantly by the General Staff of the Navy (GSN), using the Naval Strategic Concept Document (NSCD). Changes in the circumstances involved in this strategic situation would constitute a new need. Strategic and other basic guidance are also issued periodically by the Joint Chiefs of the Staff of the Armed Forces (JCOS), for defense planning and programming. Then the Defense Strategic Concept Document (DSCD) is prepared by the JCOS of the Armed Forces and reviewed by the Superior Junta of the Armed Forces. This task is accomplished in accordance with the policies, guidance and procedures established by the National Security Council (NSC), the highest level organism in the government for planning in security and defense.

The services then formulate Mid-Range Objectives to initiate projects to effect the necessary adjustments to the Force structures. These programs constitute the Five-year Defense Plan, which is included in the National Economics Plan (NEP). The NEP aims at coordinating the overall economic policy of the country for a period of five years. The Five-year Defense Plan (FYDP) is updated periodically. When a need for a new defense system is generated in the areas of responsibility assigned to the Navy, a proposal for its acquisition is initiated in the form of an Operational Requirement.

2. Operational Requirement

This is a statement of those operational needs and deficiencies that the VN can not meet with its existing capability, that is, a capability considered to be necessary for the effective conduct of operations. Like the statement of the need, the determination of the Operational Requirement (OR) is a task also assigned to the General Staff of the Navy. This requirement specifies the relevance, importance and timing for defense systems, and identifies potential alternatives for meeting the requirement.

Directive DIR-MA-CGM-0030-A establishes that "...the GSN must determine the acquisition of defense systems, on the basis of the priority demand requested for the tasks derived from the decision taken by the Chief of the Navy (CHON), for the accomplishment of the mission of the Force, in accordance with the Navy and Armed Forces strategies." [Ref. 20]

A preliminary study is conducted by the GSN to confirm the need and to show that the concept is practicable and can be met technologically. The end product of this study includes the "Operational Requirement and General Considerations of Logistic Support" of the defense system to be acquired. This constitutes the "Operational/Functional Baseline" to be used as reference to the solicitation and evaluation of the offers.

The next step is the submission of the Operational/Functional Baseline (OFB) to the Chief of the Navy (CHON).

At this point in the acquisition process the first decision, the program "Go Ahead", takes place. If the Operational/ Functional Baseline (OFB) is approved by the CHON, he will submit this OFB for consideration and approval by the Ministry of Defense. The process for approval of the OFB is accomplished through analysis and review of the need statement, the operational requirement and the general strategic situation by the JCOS and the Superior Junta of the Armed Forces. These organisms prepare the corresponding recommendations to the MD. If the OFB is approved by the Minister of Defense, the CHON proceeds to appoint "Evaluation Committees" in operational, technical and financial areas. If it is not approved, it goes back to the GSN for further consideration.

The chairmen of the evaluation committees are the Chief of the Jefature of Operations, the Chief of the Jefature of Logistics and the Chief of the Directorate of Budget and Economic Programming, respectively. The committees are assigned the analytical tasks related to the evaluation of the offers, which have been solicited, taking as reference the Operational Baseline. At this point the Chief of the GSN (CHGSN) is designated as the General Coordinator for the following stages which are, the Technical Requirement Specifications and the Bid Evaluation [Ref. 20].

On April 11, 1981 a document called "Act-DM-CGM-0001" Definition of Theoric Models for Naval Defense Systems was issued [Ref. 21]. This document includes the OFB

conceptualization for landing ships, ocean patrol boats and coastal patrol boats to be procured for the Navy in the next five years, using resources allocated in the Sixth National Economic Plan.

The indicated OFB includes the conceptual characteristics for the kind of naval ships mentioned above such as displacement, length, beam, velocity at different conditions, habitability, navigation systems, weapon systems, sensors, propulsion, generation of electrical power, etc. With the approval of the OFB and the appointment of the Evaluation Committees, the Operational Requirement stage is completed and the process goes to the next stage.

3. Technical Requirement Specifications

Most of the responsibilities in this stage of the process are assigned to the Jefature of Logistics (JLO). This organization, in accordance with DIR-MA-CGM-0030-A, "...should determine the technical requirements of defense systems to be acquired, in response to the OFB and must elaborate its technical-operational and technical-logistic specifications." [Ref. 20] These specifications form part of the basic information to be delivered to the shipbuilders qualified to present bids. They must use these specifications as a reference in the preparation of their offers.

The following factors are considered in determination of technical requirements specifications:

1. General Requirements

- The mission to be accomplished for the naval ship being considered
- Operational geographic area where the ship will be used
- Minimum operation time without support from shore
- Displacement (Full load)
- Velocity at different conditions (including cruise velocity)
- Length and beam
- Material specifications for the hull and the superstructure

2. Engineering Requirements
   - Type of propulsion
   - Operational environment conditions
   - Control Systems
   - Air conditioning systems
   - Electrical power generation systems
   - Storage capacity for food, ammunition, fresh water, gas, oil, spare parts, etc.
3. Communication and Navigation Systems
4. Weapons and Defense System Requirements
5. Habitability
6. Safety and Damage Control Equipment Requirements
7. Technical Documentation Requirements

After determination of technical requirements specifications is finished, the JELO proceeds to search in the international market for naval ship for potential firms considered as candidates to participate in the project. Offers

are to be solicited encouraging the concurrence and competence of the firm abilities to manufacture the project. This task is accomplished in response to the following criteria included in Appendix B to DIR-MA-CGM-0030-A to qualify the firms to be selected to participate in the project.

- Legal status of the company
- Experience in production of the systems to be acquired
- Financial situation and performance on similar projects
- Quantity and availability of human resources
- Market and labor stability
- Political situation in the offerer's country.

In the same way, DIR-MA-CGM-0030-A, Appendix C establishes the final documentation necessary to be included in the solicitation for offers such as:

1. Specifications technical-operational and technical-logistics of the naval ship to be procured, its systems and subsystems
2. The pre-definition of the contract
3. Evaluation criteria to analyze the offers and their relative importance in general terms (pondering each factor considered)
4. Requirements to be met by the bidders in the offer presentation
   a) Last date the offer can be received
   b) Minimum validity period
5. Information about unit prices for different systems, subsystems and components, in accordance with the type of money to be utilized
6. Delivery time for the final product
7. Warranties

8. Financing

9. Language to be used.

In order to motivate the national shipbuilding industry to participate in this kind of project, DIR-MA-CGM-0030-A establishes that it is desirable when possible, to make the selection among Venezuelan companies.

At this time, Technical Requirement Specifications (TRS), already defined, are sent by the JELO to the "Evaluation Committees" (ECs). TRS are used by ECs to elaborate the evaluation criteria and their weighting in their respective areas. These criteria and their weighting are included in the offers solicitation.

JELO, acting as coordinator for qualification of the shipbuilders and solicitation of the offers, proceeds now to send the solicitation of bids to the different firms which have been qualified. A copy of this solicitation is sent to each Chairman of the ECs. At this time, a rough draft of the acquisition project is prepared by the JELO associated with the General Coordinator of the project at this stage (CHGSN), the Chairmen of ECs, and the assistance of the Juridic Consultor of the Navy (JCN), who is in charge of legal aspects of the acquisition contract.

At this point in the process, the second decision for the program "Go Ahead" takes place. The JELO, after reception and analysis of the bids, selects the offers which meet the criteria previously established in DIR-MA-CGM-0030-A

Appendix B (Criteria for Firm Qualification) and Appendix C (Instruction for Solicitation and Reception of Offers).

The offers selected are submitted for consideration of the CHON who, jointly with the Higher Rank Key Officers of the Navy, makes the preliminary analysis of the project.

If the CHON approves the offers selected, the project is submitted to the Ministry of Defense for its consideration and approval. Review at this level is made in the same way as already indicated when the first decision to "go ahead" was taken. If the Ministry of Defense approves the CHON decision, the project passes to the next stage "Bid/Evaluation"; if rejected, it goes back to the GNS for further consideration.

4. Bid Evaluation

As mentioned, DIR-MA-CGM-0030-A establishes the norms and procedures to be followed to carry out the acquisition process for naval ships and weapon systems for the VN. This directive specifies that bid evaluation must be made through preparation of three reports, one for each area (operational, technical and financial), plus one "Final Report" which consolidates the three reports already indicated [Ref. 20].

Tasks for bid evaluation are assigned to the CHGSN, who produces the "Final Report" in coordination with the Chairmen of the Evaluation Committees. With the purpose of establishing complementary guidance to accomplish these tasks, on June 29, 1981 the INS-EVA-0001 (Evaluation Instructive) annex to DIR-MA-CGM-0030-A was issued. This instruction

prescribes specific procedures to be used in the preparation and presentation of the "Final Report". In accordance with the procedures established, the evaluation of the bids must be accomplished through detailed analysis of each offer. Each report must include an end evaluation result, in numerical form from 0 to 100 points, in terms of the adequacy of the operational and technical reports, and in terms of cost-effectiveness for the financial report. The variables and items to be considered in each area, and their respective weighting are not detailed in the referenced procedures. The reason is that most of the time they do not represent common aspects. They vary according to the circumstances and systems being evaluated. Therefore, additional instructions required to accomplish this task depends upon the competence of each Evaluation Committee and the General Coordinator.

Significant attention has been given in the VN acquisition environment to Bid Evaluation. In this sense, the Evaluation Instruction was issued considering that there are interchangeable procedures in the preparation of the three informs already indicated and the Final Report, which are susceptible to be applied in common for any system to be evaluated.

Information to be included in reports about operational and technical areas have already been partially indicated in the technical requirement specifications. INS-EVA-001 established that the following information should be included in the Financial Evaluation Report:

1. System cost in Bolivares (Venezuelan money) and shipbuilder's country money, without initial logistic support. This initial logistic support cost must be indicated by each unit and by the total units which have been solicited.

2. Escalation costs and price analysis

3. Final price in accordance with escalation costs, considering delivery time and excluding initial logistic support

4. Initial logistic support cost, indicating cost for each factor (spare parts, tools, facilities, training, documentation, etc.)

5. Financing offered, with a description of each alternative formulated

6. Monetary and economic stability of the shipbuilder's country.

In the same way INS-EVA-001 establishes that:

1. The Final Report must be prepared by the CHGSN grouping the offers by rank, according to the following criteria:

   a. The highest set of offers, to include only those which are within the highest 15 points, constitutes the rank "ALFA".

   b. Offers evaluated below rank "ALFA" and 15 points less than each minor offer included in this rank constitute the rank "BRAVO".

   c. Offers evaluated below rank "BRAVO" constitute rank "CHARLIE".

2. The CHGSN should present the final evaluation of each offer showing only the rank of each one. In addition he should promulgate an opinion about the strategic implications of each offer. For this purpose each offer must be identified using a code in the following way:

   "A" Acceptable

   "B" Acceptable with Reservations

   "C" Not Acceptable

Opinions about offers "B" and "C" must be supported through a report classified "Secret". All the relevant information included in the Final Report is displayed in a "Comparative Table" attached to this report. Once the Bid/Evaluation Process is finished, its output is consolidated in the Final Report and the Comparative Table is prepared. Fig. 3.5 illustrates this "Comparative Table" which was issued as an Appendix to INS-EVA-001.

At this time, the General Coordinator for this stage submits his conclusions and recommendations. This step is accomplished by the CHGSN jointly with the Chairmen of the Evaluation Committees. At this point, the third decision in the process takes place. The CHON reviews the proposal jointly with the "Higher Rank Senior Officers of the Navy". If the program has some deficiency or is rejected, it goes back to the CHGSN for further consideration.

If the program is approved it will be submitted by the CHON for consideration and approval by the Ministry of Defense. Ministry of Defense considers it in the usual form already indicated. Nevertheless, when it is believed that the program has political or economic implications, then the approval of the President of the Republic is necessary. For example, a controversy arose at the decision stage of the source selection process in the "Mariscal Sucre" class frigate acquisition program, and the President of the Republic had to make the final decision on it. After the final decision

COMPARATIVE TABLE FOR BID EVALUATION

RANK	SHIPBUILDER	COUNTRY	DESCRIPTION OF THE MAJOR DEFENSE SYSTEM	FINANCIAL EVALUATION COMMITTEE INFORMATION							TRAINING SUPPORT	DELIVERY TIME	STRATEGIC CONSIDERATIONS	
				INITIAL COST OF THE SYSTEM	ESCALATION OR PRICE REVISION	FINAL PRICE WITH ECONOMIC ADJUSTMENT	INITIAL LOGISTIC SUPPORT OFFERED	FINAL TOTAL COST OF THE SYSTEM	FINANCING OFFERED	ECONOMICS &/OR MONETARY STABILITY				

Figure 3.5

SOURCE: VENEZUELAN NAVY

has been made on the shipbuilder or contractor(s), the acquisition process passes to the next stage.

5. Project Definition and Contract Definitization

The approval of the proposal marks the beginning of this stage, where two activities are carried out at the same time: the definition of the major characteristics of the program, including definition of different organizations, norms and procedures to manage the project, and the configuration of the contract in a definitive form.

Most of the responsibilities in this stage of the process is assigned to the Jefature of Logistics. The Chief of this Jefature (JELO) acts as coordinator until the date that a Venezuelan Naval Mission is created to manage the project. This VNM will be located in the country whose shipbuilder has been selected. JELO with a group of people (military and civilian) initiates negotiations of the overall contract. As a result of these negotiations with representatives of the shipbuilder selected, a more elaborate and precise draft of the contract is prepared. In order to do this, the preliminary contract which was included in the solicitation for offers, is taken as a reference. Most of the people called to work in this stage are drawn from the Evaluation Committees and other functional organizations of the VN. They will interact with representatives of the shipbuilder in their respective areas. The purpose of these tasks is to establish different conditions, characteristics, and agreements by both parties

for the whole program to be included as clauses in the definitive contract. These activities constitute the Project Definition Stage. In this stage the major program characteristics are determined through extensive analysis. Detailed estimates of the construction costs, different systems and subsystems costs, and costs related to the management and human resources available to the project in the foreign country are also considered. Trade-offs are made among different aspects of the program. The end product of this stage leads to the Contract Definitization.

At this time, the appointment of the Chief of the Naval Mission and the configuration of the organization to manage the project takes place. The Chief of the Naval Mission (CHNM) is responsible to the CHON for the materialization of the project from this time. He assumes overall responsibility for the project, is required to develop the appropriate documentation and to be involved in project related activities. As the acquisition project proceeds, the Chief of the Naval Mission is responsible for:

- planning and coordination of all project activities
- maintaining a comprehensive review of physical and financial progress against planned targets
- recommending actions to correct any decision.

The decision-making center for the acquisition process is located at Venezuelan Navy Headquarters. This situation will remain unchanged during the life cycle of the acquisition process for major decisions on the program.

Activities leading to the installation of the Naval Mission in the shipbuilder's country are initiated. The size of this organization varies depending upon several factors. No two projects are exactly the same, so the composition of the Naval Mission is regulated by the timing, complexity, workload, priority, and availability of manpower.

Fig. 3.6 shows the original structural organization for the Venezuelan Naval Mission in Italy (VNMI). It was created on November 25, 1975 to carry out the overall management activities required by the "Mariscal Sucre" class frigate acquisition program. This organization includes 3 Divisions (Training, Technical Supervision and Logistics). Each Division is made up of different departments according to specialized tasks assigned in specific areas.

The last step in this phase, Contract Definitization, takes place when the Venezuelan Navy and the Contractor(s) agrees definitively over all the conditions and clauses being discussed. In the meantime a group of people have been working on the definitization of the contract. This task is accomplished under the supervision of the JELO, who is responsible for the technical configuration of the whole project, and the Juridic Consultor of the Navy, who is responsible for all the legal actions in the contract.

The combined activities are known as "Contract Definitization" and its output is the final draft of the contract. This document, after being signed by the contractor(s),

ORGANIZATION OF THE VENEZUELAN NAVAL MISSION IN ITALY
"MARISCAL SUCRE" CLASS FRIGATES ACQUISITION PROGRAM

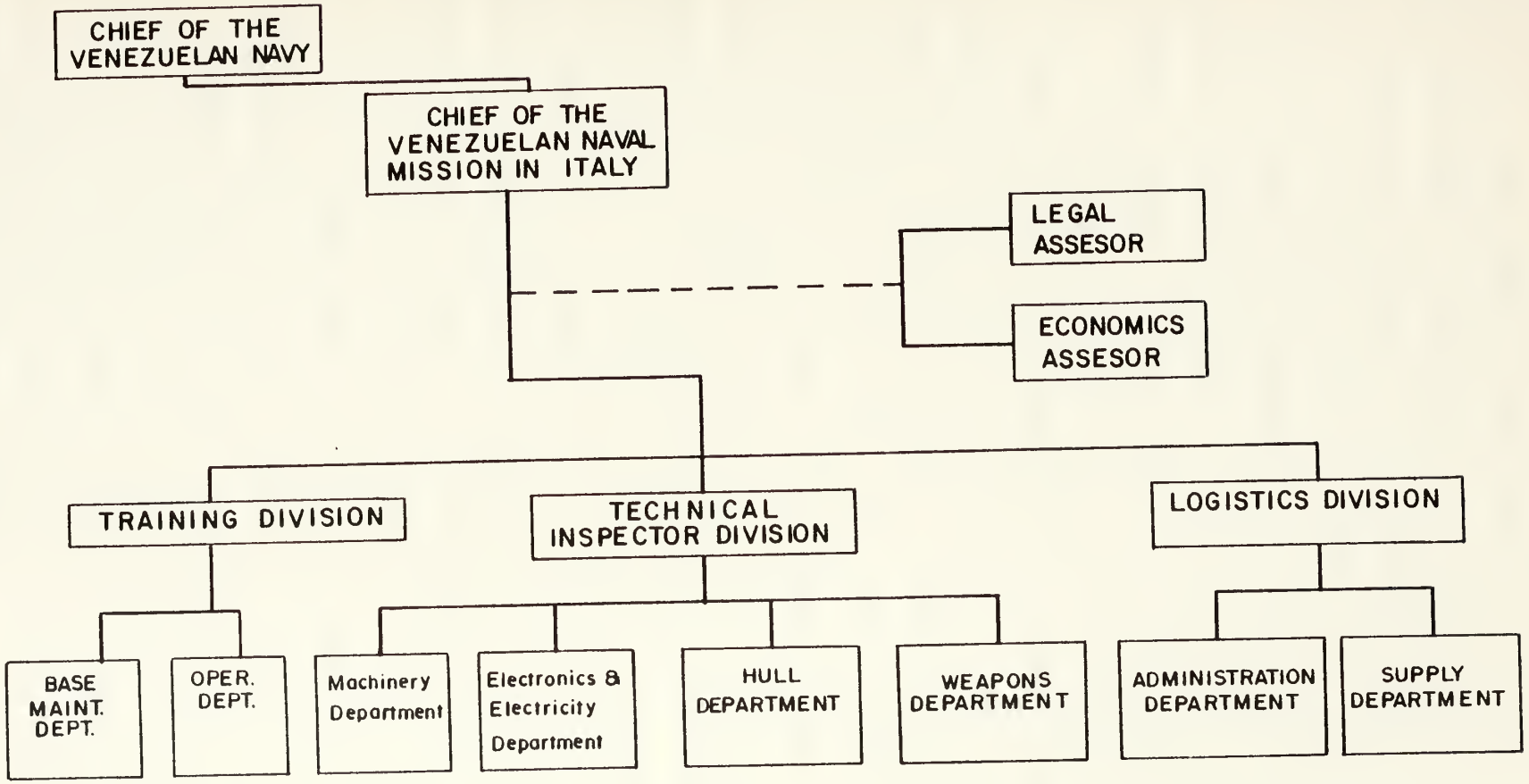


FIGURE 3.6

SOURCE: VENEZUELAN NAVAL MISSION IN ITALY

is submitted by the CHON to the Ministry of Defense to be approved and signed. According to Venezuelan law, he represents the Executive Branch of the Government when contracts for acquisition of major defense systems have to be considered. In accordance with Appendix A to DIR-MA-CGM-0030-A (Acquisition Process Flowchart), the acquisition process for major defense systems finishes when the final draft of the contract is signed by both parties, the MOD and the Contractor(s).

Transportation and installation of the Venezuelan Naval Mission in the shipbuilder's country takes place now. At the same time the main documents to monitor the program have to be prepared by the CHNM. The contractor(s) initiates the necessary actions to have the program started. A series of interactions commence between the CHNM, the prime contractor, the subcontractor for different systems and equipments, and the VN Headquarters. From this time, the program will be monitored under the responsibility of the CHNM, who must accomplish this task under the guidance of the "Administrative Procedures and Norms Manual", corresponding to each Venezuelan Naval Mission created for these purposes. This document is prepared by the CHNM before starting the construction program and is updated each time any significant change is necessary.

Although the last stage included in the VN acquisition flowchart is the Project Definition and Contract Definitization, in reality the program will only be complete when all units are delivered and incorporated in the Fleet with its corresponding Initial Logistic Support.

D. NAVAL SHIP ACQUISITION THROUGH MAP/FMS PROGRAMS

Traditionally, the Venezuelan Navy has imported the naval ships it requires rather than meet its requirements for defense systems from the internal shipbuilding industry. The Venezuelan naval industry has not reached an adequate stage of development to meet the Navy's needs. For this reason warships have to be procured in the international market using various procedures such as shipbuilding programs for a new class of vessels, military aid and foreign military sales programs (MAP/FMS), loan agreements and credits.

Prior to World War II, the U.S. generally maintained a policy of isolation. However, some military services were provided to foreign countries in the form of advice and training. The time frame between World War II and 1976 was a period of development of Military Aid/Foreign Military Sales policy and activities. Since 1950, Venezuela has been able to import naval ships from the United States through the U.S. Military Aid/Foreign Military Sales Program, using both credit and cash types of payment. The credit agreements are normally financed directly by the U.S. Department of Defense, or in very few cases through the Export/Import Bank with DoD guarantee [Ref. 17: 80].

In 1976, the Humphrey/Morgan Act on FMS established the current policy. This act, called the International Security Assistance and Arms Export Control Law, emphasized the will of the Congress to bring American arms export to the attention

of the public. It was felt that open activities under public scrutiny would result in a better and rational FMS policy [Ref. 23].

During the period 1962-1980, the Venezuelan Navy received defense systems from the U.S. represented by Second World War destroyers and submarines, refitted ASW aircraft, and some auxiliary vessels like LST, LSM and tugboats. This latter equipment were transferred to the VN on loan agreements.

There exists in the U.S. Government (USG) a large number of acts, directives, procedures, regulations and reports regarding FMS programs. Implementation of these programs is complex but it does follow a logical, hierarchical pattern and process in the U.S. Government. The Congress maintains overall control through budget constraints, while the Department of State determines the basic eligibility and execution policy. DoD executes the MAP/FMS programs through its Military Services (in this case, the USN) using a contractual document between the U.S. Government and the foreign government (Venezuela). This document is a standard form known as DD Form 1513, "Letter of Offer and Acceptance" (LOA). The LOA specifies the terms and obligations concerning the two governments in processing and implementing the acquisition of the naval ships.

Based on existing DoD Directives and Instructions, the process to implement a FMS program to Venezuela consists of eight basic steps. This process starts with the Venezuelan

Government request for a sale and terminates in the U.S. Government billing to the Venezuelan Government for the naval ships, materials, spare parts, and services, as set forth in the approved LOA. The request for the letter of offer and acceptance is often known as "A Request for Sale" or "Request for Price and Availability", presented by the Venezuelan Government to the U.S. Government.

From the Venezuelan Government the submission of the LOA goes through diplomatic channels using the U.S. Embassy (Military Assistance Group) in Venezuela or the Venezuelan Naval Attache in Washington D.C. From here the request is coordinated for approval between the U.S. Department of State and Department of Defense.

Following are the necessary steps to be considered:

1. Submit request for LOA
2. Assign case designator and request price and availability (P&A)
3. Determination of P&A and submission to U.S.N. headquarters
4. Preparation of the Offer and Acceptance
5. Review, Acceptance and Funding of the Offer and Acceptance
6. Provide Case Directives
7. Furnish Naval ship, materials, services, and notify U.S.N. Accounting Center
8. Billing to the Venezuelan Government.

The LOA is extremely important for processing the government to government FMS. It serves as a contract and a basic

document for the system acquisition. Therefore, the LOA must be prepared with careful attention by all the parties concerned.

E. CHAPTER SUMMARY

In this chapter the VN acquisition process for major defense systems has been described. Naval ships, integrated with their systems and subsystems, are considered as major defense systems, and are acquired through a very complex process. Norms and procedures to carry out this process are laid down in Directive DIR-MA-CGM-0030-A. This directive is complemented by the INS-EVA-001 (Bid Evaluation Instructive) and the entire process is developed in accordance with the VN Acquisition Flowchart for Major Defense Systems (Fig. 3.1). This flowchart has been abbreviated by using Fig. 3.2 (stages in the VN naval ships acquisition process). The procedures established in DIR-MA-CGM-0030-A emphasize the need for approval at various stages of the process.

The "User-Producer" Dialogue is almost imperceptible through the whole process. Interactions of people from the Fleet (Users) with the General Staff of the Navy and Jefature of Logistics (Producers) only take place during the Conceptualization Studies (Operational Baseline) and the Bid Evaluation stages, through the Evaluation Committees.

For the purpose of explaining the entire life cycle for naval ships, 3 decisions points and 5 stages have been indicated. The final stage, Project Definition and Contract

Definitization, although not explicitly illustrated in the acquisition flowchart (Fig. 3.2) has been inferred from the available literature and interchange of opinions with people working on these activities for the VN.

Organizational and functional structures for the Venezuelan Ministry of Defense and the Navy are indicated, emphasizing that in the VN acquisition organization neither negotiating or contracting structures exist to meet these activities. In the next chapter a comparison between the Venezuelan Navy and U.S. Navy Ship Acquisition Process is made. The purpose is to compare relevant aspects from both processes to be used as a basis to formulate an improved acquisition strategy for the VN, the main objective of this thesis.

IV. COMPARISON OF THE VN AND USN SHIP ACQUISITION PROCESS

In Chapter II, the U.S. DoD acquisition process was described as it is generally carried out by the U.S. Navy.

The Venezuelan Navy acquisition process, as described in Chapter III, is based principally on procurement of an existing system from a developed country with a shipbuilding industry. Also, Chapter III describes the process by which naval ships are transferred to Venezuela from the U.S. through Military Aid or Foreign Military Sales Programs (MAP/FMS).

This chapter focuses on the principal differences between thw two systems. Following in Chapter V is a proposed strategy for managing the VN acquisition process for naval ships. By formulating this proposal, special attention was given to the main differences and relevant aspects found by the researcher in both processes.

As indicated in Chapter II, the U.S.N. uses two basic principles to carry out its acquisition process. First, is the concept of the SHAPM, in whom the management authority and responsibility is essentially centralized, being the unique person accountable for the project's failure or success. Second, is the concept of system acquisition phases and well-defined milestones through the process which serve as decision points for top management level.

The VN acquisition process has recently been revised and updated, with the issue of DIR-MA-CGM-0030-A in February 1978 and its attached INS-EV-001 in June 1981. By comparing the basic method of the VN and U.S.N. acquisition process some differences become apparent. It appears that a remarkable improvement can be reached in the VN acquisition process by adapting and integrating some concepts, procedures and principles of the U.S.N. acquisition process.

A. MARKET CONSIDERATIONS FOR NAVAL SHIPS

The U.S. Department of Defense is continually looking for ways to improve its acquisition procedures. An example of this is the Acquisition Improvement Plan (AIP) emphasized in the new DoDD 5000.1 issued in April 2, 1982. This directive resulted from new initiatives to improve the acquisition process, as expressed in Deputy Secretary of Defense Frank Carlucci's Memorandum issued on April 30, 1981. It included as one of the first tasks in ship acquisition to attack the front end of that process. The tool to do that would be the Milestone 0 decision for Program Initiation Stage.

Decisions taken in this stage lead to the Five-year Shipbuilding Program. When the Five-year program has been approved, then the next problem is to define the ship operational and design requirements and to solicit proposals from the available shipyards in the U.S. From this point, negotiations are conducted between the U.S. Shipbuilding Industry

and the U.S. Navy, where the latter encourages and motivates competition among possible bidders.

On the other hand, the VN has to search in the international market for naval vessels. The purpose is to determine what country with an existing shipbuilding industry has the capability and availability to meet VN needs for naval ships, within a desired time span and budget constraints.

When the world market for warships was investigated to buy the "Mariscal Sucre" class frigates in 1974-1975, five offers were rejected because of the following factors:

1. The frigate offered by Germany was a paper project still in its design phase.

2. The price offered by Sweden and Holland were higher than the budget constraint which had been fixed.

3. Great Britain did not offer any warranty for delivery time, was facing an economic crisis, had many union problems, and did not offer an "Offset Agreement" included by the VN in the bid solicitation.

4. The offer from Spain was deficient with regard to price and lack of technical capabilities. Nevertheless, this would have been an appropriate country in which to place the project because of language, and cultural, commercial and political ties.

In conclusion, many aspects have to be considered about the international sources in order to award a naval ship acquisition contract.

B. THE VN AND U.S. NAVY ACQUISITION PROCEDURES

A striking difference exists in this regard. The U.S.N. acquisition process deals with the system throughout its life cycle, while the VN process begins with the operational

requirement and its conceptualization in the Operational Baseline. It then jumps to either the late Full-scale Development Phase or to the production phase phase of an existing naval ship. To highlight some of the issues, similar activities in both processes are compared, as shown in Table I and Figures 4.1 through 4.4.

TABLE I

THE VN AND USN ACQUISITION PROCESS COMPARISON

	SUBJECT	USN	VN
1.	Needs	Based on mission and threat analysis	Similar procedure based on constant review of Naval Strategic Concepts
2.	Submission of Needs	Mission Element Need Statement (MENS)	Mid-range Plans which are included in the Five-year Defense Program. Needs are submitted as Operational Requirements
3.	Approval of Needs	Approved by the SECDEF by acceptance of the Program Objective Memorandum at Milestone 0	Done with the approval of the "Operational Baseline" submitted by the CHON to the Ministry of Defense
4.	Strategic Plan for the acquisition process	The acquisition strategy is developed just after the need is approved at Milestone 0 SHAPM appointed at this time is the key figure in preparing the Acquisition Plan	Not clear definition of the process concerning the acquisition strategy. The CHGSN is designated as General Coordinator for the following two stages: (Technical Requirements Specifications and Bids/Evaluation)

5.	Structure of the acquisition process	Well-defined structure which consists of five phases and four milestones	The structure has 3 decisions points but the stages are not explicitly defined. The flowchart for the process finishes with the approval of a definitive contract without including the production and deployment stages.
6.	Ship Acquisition Program Manager (SHAPM)	The SHAPM and his Project Management office are the key elements in the acquisition of naval ships	A Venezuelan Naval Mission Office is established and the Chief of this Mission acts as SHAPM. Tasks and duties concentrate on coordination to manage the acquisition. Decision center for major changes in the program is located in VN Headquarters.
7.	Source Selection	Based on competition by contractors and free to choose within the U.S. shipbuilding industry the best alternative consistent with cost and schedule	Constrained by the design that already exists in the international market for warships hoping that one of them can meet the need with few modifications.
8.	Trade-offs between cost, performance and schedule	One of the important concerns of the SHAPM during the entire process	Concerned primarily with performance while cost and schedule are constrained by contractual conditions established with foreign vendor
9.	"User-Producer" Dialogue	The producer organization, under the Chief of Naval Material works for the user, represented by the Office of the Chief of Naval Operations (OPNAV)	This relationship is almost imperceptible. There is little influence from the User (Fleet) on the Producer (General Staff of the Navy and Jefature of Logistics)

10.	Acquisition Policy	DoDD 5000.1 and DoDI 5000.2 provide the basic policy and procedures for acquisition within the DoD	DIR-MA-CGM-0030-A provides the basic guidance on the procurement process for major defense systems and equipments
11.	Implementing the acquisition process	A Project Manager's Guide from Naval Material Command gives details of of planning, programming and processing of documents about the entire acquisition process	The Administrative Procedures and Norms Manual for each Venezuelan Naval Mission created for this purpose--provide guidance to administer the acquisition contract.
12.	Contracting activities	Contracting carried out under the Defense Acquisition Regulations (DAR). A Contracting Officer is appointed to each project and is the only person authorized by law to contract, not the SHAPM	Contracting carried out under Venezuelan Laws. The Ministry of Defense, acting as the representative of the Venezuelan Government is the sole person authorized by law to contract in the Ministry of Defense contracting environment
13.	Types of contracts	Different types of contracts are awarded: Ship system Design, Producibility, Support, Lead Ships, Follow Ships, etc.	Only two types of contracts are awarded: Construction contract for new ships and LOA for acquisition through MAP/FMS
14.	Project Monitoring and Control	Activities carried out in accordance with DoDI 7000.2 (Performance Measurement for Selected Acquisitions). It specifically does not state that PERT/Time must be used. However, output required by C/SCSC	PERT/Time System of management is indicated in each VN Mission Administrative Procedures and Norms Manual as the method to be used to carry out activities regarding Contractor's Cost and Schedule Control

		dictates that the system used must be very similar to PERT/Time	
15.	Operational and/or Technical Changes	SHAPM is authorized to evaluate and implement necessary changes during the naval ship acquisition process	VN Mission may request changes but not automatically made. When the changes include increase in costs and/or delays in schedules, approval must be obtained from VN Headquarters and with the agreement of the prime contractor
16.	Integrated Logistic Support (ILS)	ILS planning effort, started in earlier phase is intensified during Full-scale Development Phase.	ILS is not considered as such. Instead, Initial Logistic Support is included in the acquisition contract in order to get spare parts, tools and test equipment for certain initial period
17.	Initial deployment support	Relies heavily on the prime contractor and subcontractors	Is very difficult to obtain due to geographical constraints. It is done through assistance agreements and accelerated training and supply during the construction of the ships.

Figures 4.1 through 4.4 show a side-by-side presentation of the U.S.N. and VN acquisition processes for naval ships. An examination of the flow charts indicates that both procedures have sequential steps with feedback loops for the re-examination of different actions where necessary. Some procedures and activities are carried out in a similar way, but in others there exist notable differences.

NEED IDENTIFICATION

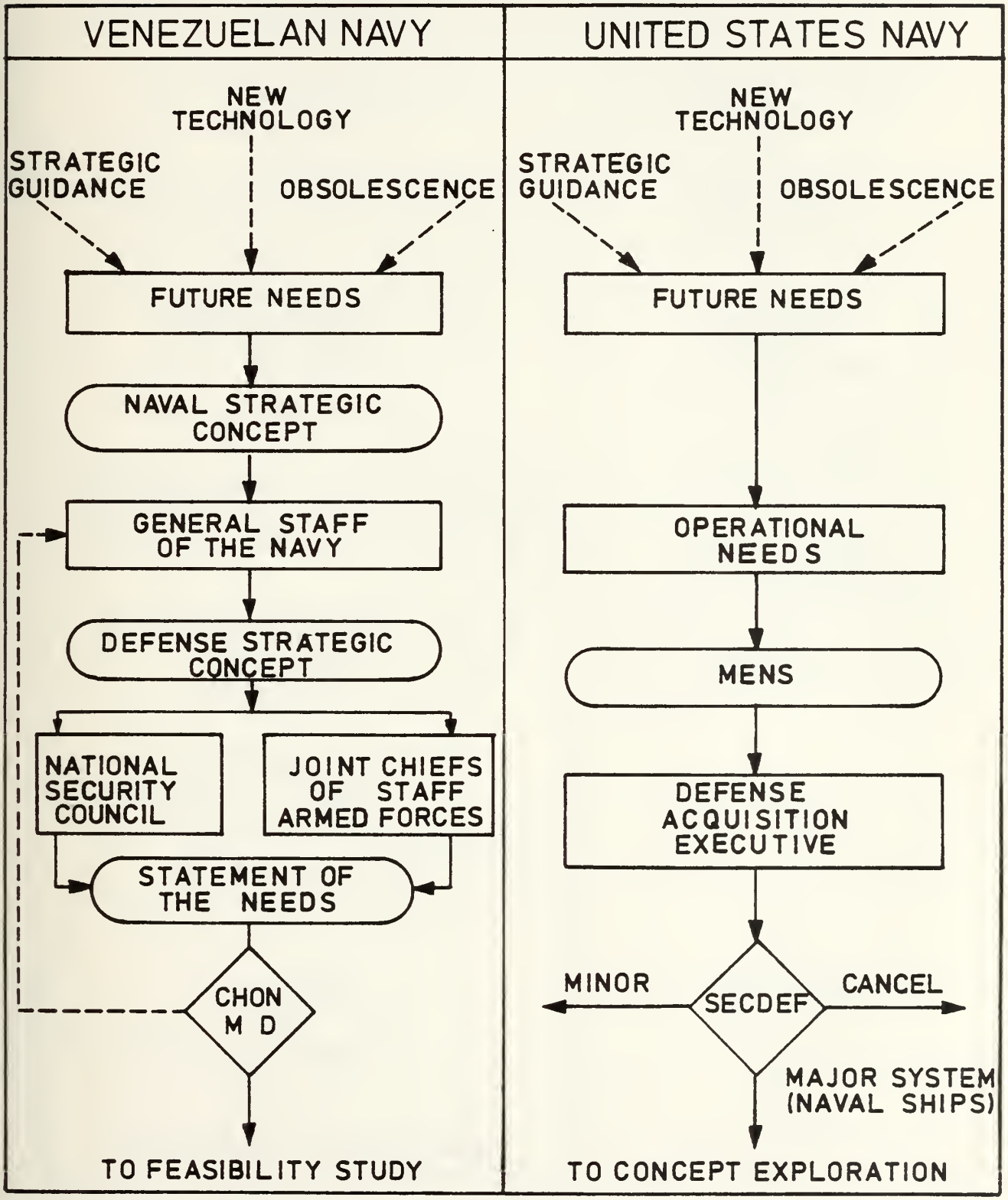


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FIGURE 4.1

CONCEPT EXPLORATION

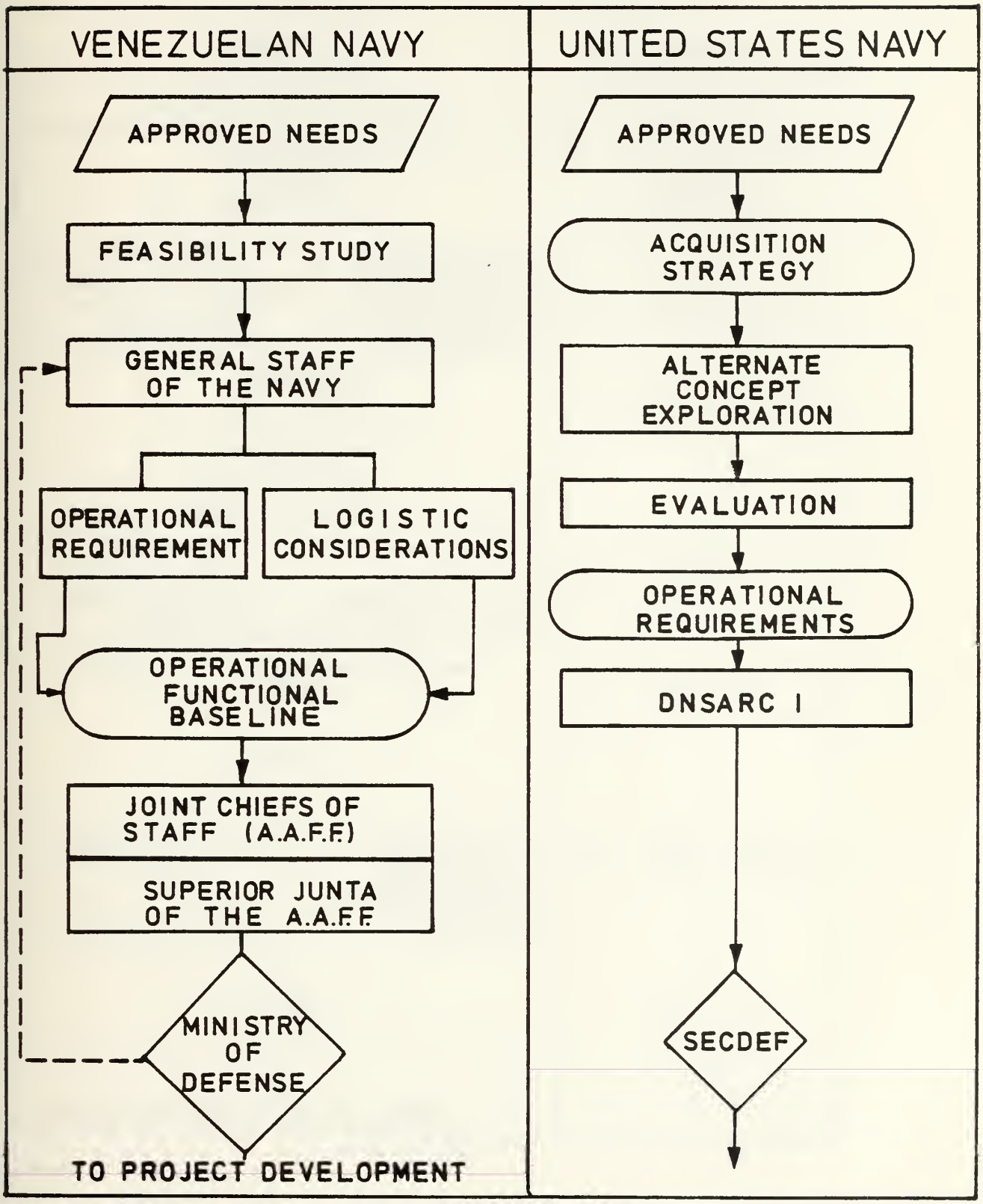

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FIGURE 4.2

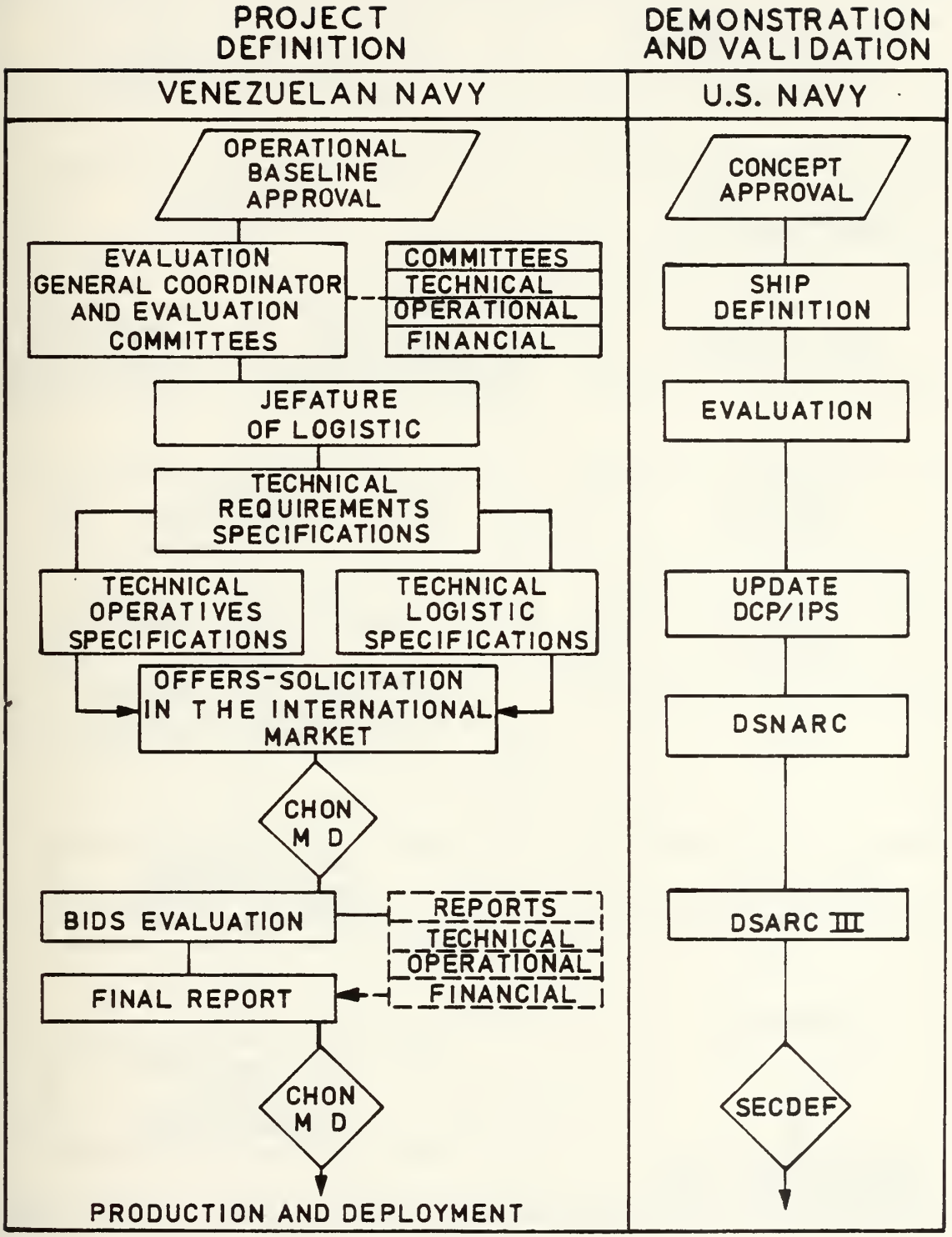

FIGURE 4.3

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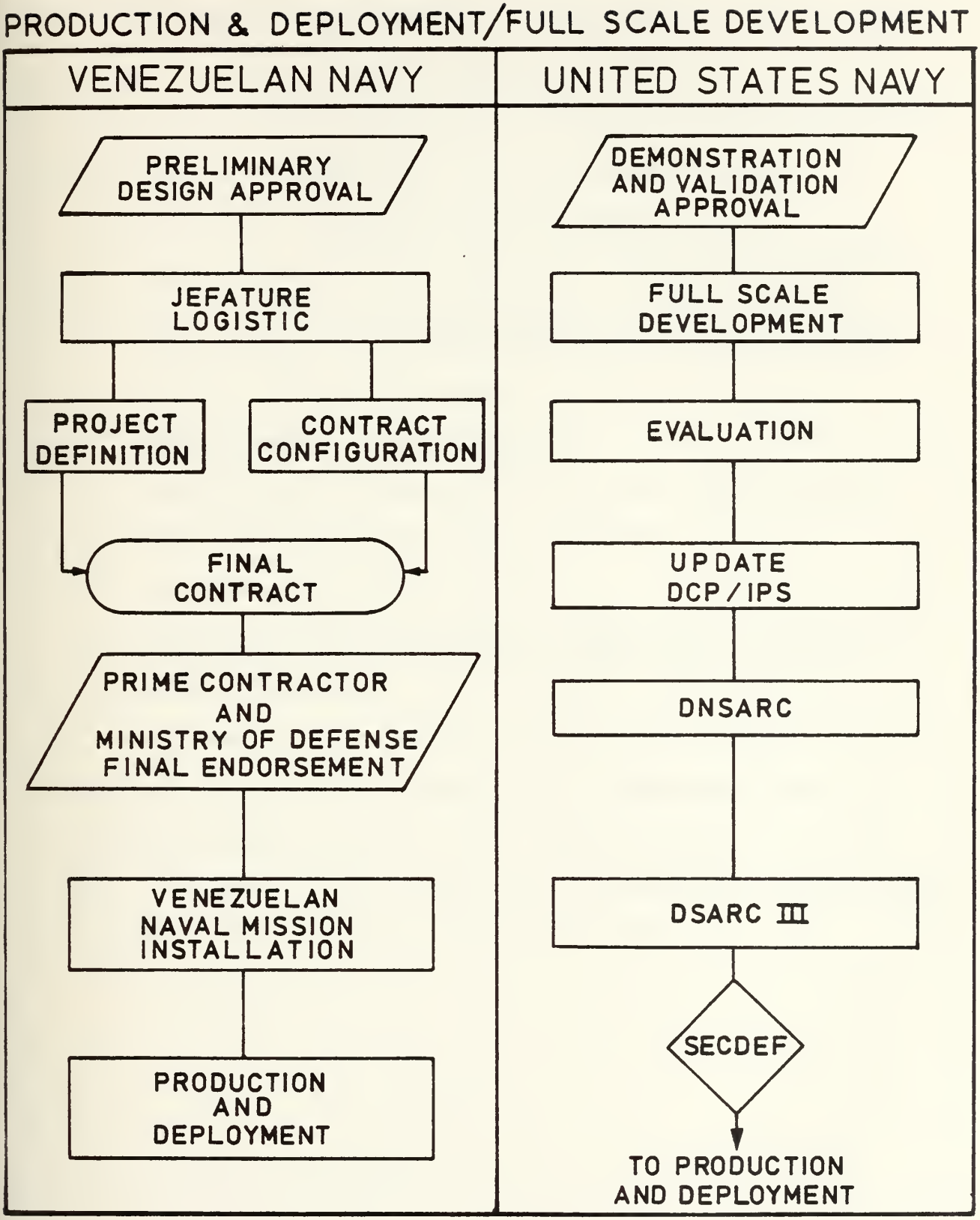

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FIGURE 4.4

From Table I and Figures 4.1 through 4.4, illustrating the comparison, it may be inferred that the existing acquisition process for naval ships carried out by the Venezuelan Navy, contains deficiencies in some areas such as:

1. Structure of the Acquisition Process
2. Establishment of the Operational/Functional Baseline
3. Ship Acquisition Program Manager (SHAPM) and Ship Acquisition Program Management Office (PMO) Concept
4. Source Selection Process
5. Procurement Plan Formulation
6. Negotiation & Contracting Structures and Procedures
7. Cost Management/Life Cycle Costing
8. Integrated Logistic Support
9. Preparation and Execution of the Letter of Offer and Acceptance (LOA) to procure naval ships through MAP/FMS Programs

In Chapter V, as a result of the above comparison, a proposed acquisition strategy for the Venezuelan Navy is developed incorporating certain features used by the U.S. Navy. The author feels this would substantially improve the management of ship acquisition by the VN.

V. NAVAL SHIP ACQUISITION STRATEGY: A PROPOSAL FOR THE VN

A. STRATEGY IN PERSPECTIVE

In accordance with the American Heritage Dictionary of the English Language, strategy is "the art of or skill of using stratagems in politics, business, courtships or the likely" [Ref. 25].

A thorough preparation for what is now often called "strategic management" has resulted in acceptance of the importance of making current decisions in the context of medium and long-range plans. Nevertheless, in its simplest meaning, a strategy can be a very specific plan of action directed at a specified result within a specified period of time. As indicated in Section I.C, this thesis is oriented to the determination of a functional strategy, based on the combination of purpose and policies, to improve the acquisition process for major defense systems in the Venezuelan Navy environment.

Specifically, the main objective is to assist the managers of any naval ship acquisition program by outlining the structure of the acquisition process, identifying key participants and describing their roles, indicating improved methods and procedures to move the program from one milestone to the next, and most important, to help avoid possible pitfalls during the entire process.

Some of the advantages of the U.S.N. acquisition process, such as the structural concept of phases and milestones, the project management (SHAPM) concept, and implementation procedures, may be readily adopted and integrated in the VN acquisition environment. Nevertheless, an appropriate adaptation has to be done because of the constraints imposed by the VN reality and resources.

One of the main constraints in the VN acquisition process is represented by the need to procure its defense systems in the international market. The continual expansion of the acquisition process into the international environment presents new challenges to everyone. From the program manager to the contractor administrator, situations will be encountered requiring innovative resolutions in areas where policy and procedures have neither been developed nor tested. The success of international acquisition is dependent on the commitment of spirit, ability and resources to meet the program objectives. While formulation of policy guidance is necessary to ensure consistency in the VN acquisition process management actions, optimal achievement of goals will only be accomplished with the implementation of a suitable strategy on the part of all concerned with the acquisition project.

The evaluation of the deficiencies already indicated, has led to the formulation of a proposed management strategy through the following patterns:

Model A

By assuming the acquisition of a new class of ships in the international market, except from U.S.

Model B

By considering the particular acquisition process, through MAP/FMS programs, for naval ships already incorporated in the U.S. Fleet.

B. SHIPS ACQUISITION STRATEGY IN THE INTERNATIONAL MARKET: MODEL A

Model A has been derived by comparing the U.S.N. and VN acquisition processes. It is difficult to make valid comparison between processes like these because both navies have diverse strategic environments and different domestic capabilities and needs which combine to create unique systems. Instead, the most critical areas in both processes have been considered with the purpose of improving the VN acquisition process for naval ships.

1. Proposal Structure for the VN Acquisition Process

The evaluation of DIR-MA-CGM-0030-A and particularly the VN Flowchart (Chapter III.C) has lead to the suggested modifications of the stages and decision points as follows (Fig. 5.1).

- Phase 0 — Need Determination, which ends at Milestone 0, Statement and Approval of the Need
- Phase I — Operational Requirement, which ends at Milestone 1, Approval of the Operational/ Functional Baseline
- Phase II — Technical Requirement Specifications and Source Selection Process, which ends at Milestone 2, Approval of the "Final Report"

PROPOSED STRUCTURE FOR THE VN SHIPS ACQUISITION PROCESS

MODEL "A"

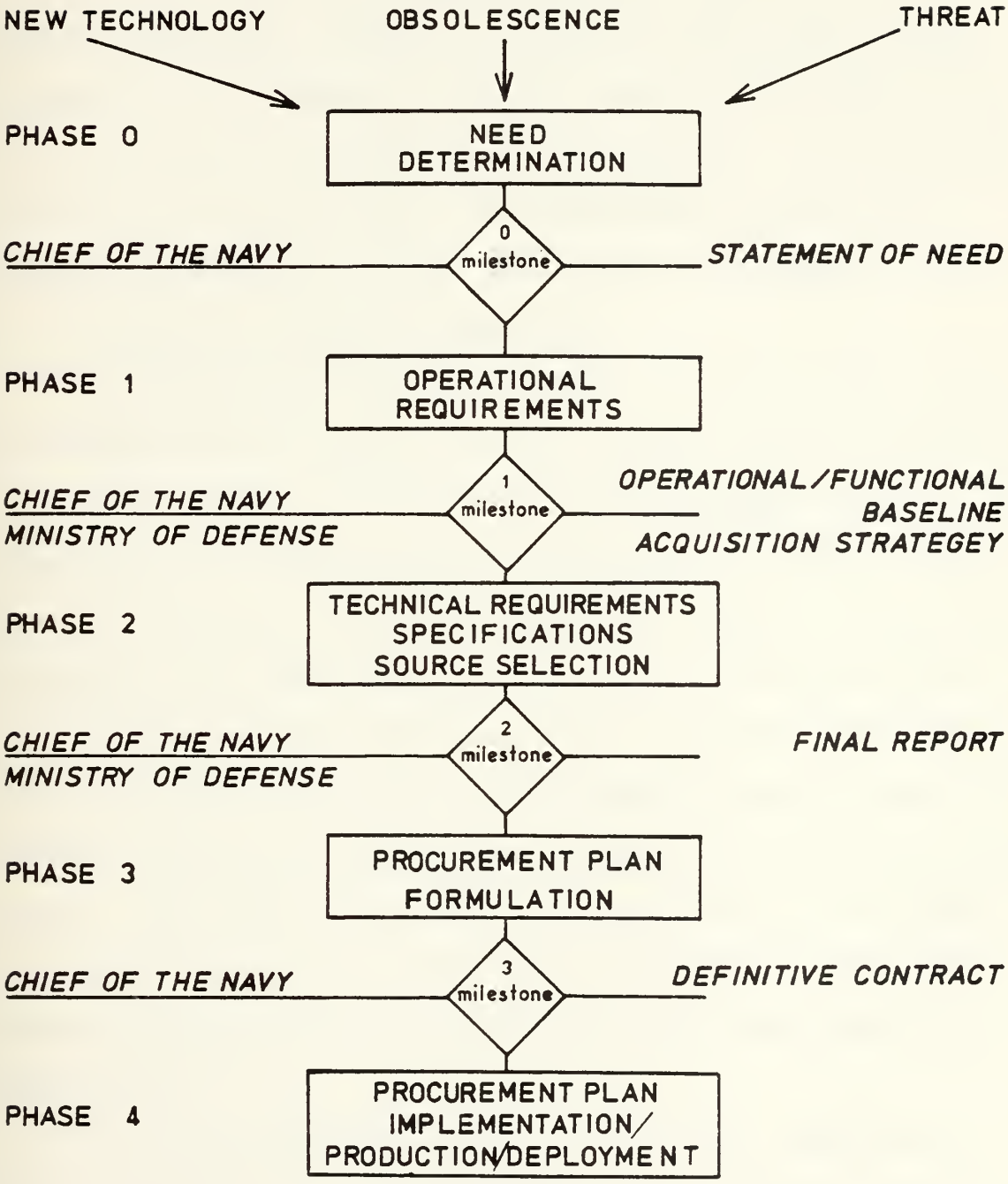


FIGURE 5.1

Source: Prepared by author

- Phase III Acquisition Plan Formulation, which ends at Milestone 3, Installation of the Venezuelan Naval Mission in Contractor's country

- Phase IV Procurement Plan Implementation, Production and Deployment, which ends with deployment in Venezuela of the last ship.

The proposed structure presents 5 phases with 4 well-defined milestones. Phase 4 relates to Procurement Plan, Implementation, Production and Deployment in Venezuela which is not included in the existing VN Flowchart. This proposed structure will allow better implementation and decision-making in the entire process simplifying its control.

2. Phase 0: Need Determination

During Phase 0, the determination of the need should be accomplished by the GSN through constant review of potential threats using the Naval Strategic Concept Document. New technologies and obsolescence of the Navy's inventory must also be evaluated. Tasks leading to statements of needs are performed in the same way as in the U.S.N. Preparation of the Statement of Need indicates that a specific deficiency exists or a new opportunity in the Navy's mission capability has been identified and requests approval to take appropriate action. The Chief of the Navy, by approving the Statement of Need at Milestone 0, allows the initiation of the acquisition process with the preparation of the Operational Requirement.

The acquisition program for 30 ships (destroyers, frigates, submarines, patrol boats, landing ships, and tug

boats) to meet potential threats and obsolescence during the 1970s, was formulated in the thesis of CDR Ganain Oviedo, Strategic Fundaments for the Venezuelan Fleet in the Future [Ref. 26]. "Mariscal Sucre" class frigate acquisition project constitutes the backbone of this program.

3. Phase 1: Establishment of the Operational/Functional Baseline (OFB)

The General Staff of the Navy should be assigned the responsibility for the preparation of the Operational Requirements during Phase I. Activities concerning this phase must be carried out as described in Chapter III.C. These activities should also be assigned to the GSN and performed at Phase I. It is during this phase that alternative solutions are conceptualized, proposed and selectively evaluated. The objective of this phase should be the determination of the most promising system concept (naval ship) and initial preparation of plans for the balance of the acquisition program. This activity is based upon the Operational Requirement. It is what in the existing VN process is analyzed under the title of "Operational Requirements and General Considerations of Logistic Support" of the defense system to be procured. The final output of this phase must be the Operational/Functional Baseline. (This is called Theoretical Model in the existing process). The Operational/Functional Baseline should address the functional and performance characteristics necessary to meet the Need Statement, the required capabilities, and

should be accompanied by a preliminary life cycle cost estimate and logistic supportability concepts.

Approval of this document should be made at Milestone 1, and the final decision to go ahead with the program must be taken by the Minister of Defense (Fig. 5.1). At this time the CHON, based on the approval of the OFB, should appoint a Ship Acquisition Program Manager (SHAPM) and his Staff to carry out the project, the Evaluation Committees to perform the Bid Evaluation activities, and assign the Chief of Logistics the responsibility for the technical overview of the project.

One important aspect that must be considered at this point is the initiation of the "User-Producer" Dialogue between representatives of the Venezuelan Navy Fleet (User) and the SHAPM and the Jefature of Logistics (Producer). This dialogue must continue during the whole process, allowing the Producer to obtain recommendations and insights from Users on operations, support, and maintenance for the new naval ship which is being acquired.

4. The SHAPM and Program Management Office (PMO) Concepts

In the existing VN acquisition process, the Chief of the corresponding Venezuelan Naval Mission and the structure of his organization is designated after the definitive contract is approved at the Contract Definitization Stage (Section III.C). Instead, this proposal suggests that a Ship Acquisition Program Manager and his Staff (Ship

Acquisition Team) should be appointed immediately after the approval of the Operational/Functional Baseline. The SHAPM should start his activities as soon as possible, namely at Milestone 1. For major ship acquisition process, the SHAPM should report directly to the CHON. For smaller projects he would be assigned to the JELO. The SHAPM should be charged with responsibility for acquiring and fielding, in accordance with instructions from line authority, a cost-effective solution to the approved mission need that can be operated and supported within available resources. The SHAPM should ensure that his assignment (Ministerial Resolution in Venezuela) provides an adequate framework within which he can function effectively.

As indicated in Section II.E, the SHAPM must be the central figure for the management of the entire naval ship acquisition process. He should be the individual ultimately responsible and accountable for success or failure of the program. Since management of an acquisition program for naval ships involves multiple decisions of various degrees of complexity and importance, the SHAPM must delegate some of his authority to others in his project. It is important, therefore, that assignment of responsibility and delegation of authority be logically made and carefully defined. For this reason an Acquisition Team is compulsory to accomplish of a successful naval ship acquisition project.

The SHAPM is responsible for creating an effective Program Management Organization (PMO). The success that he will have in tailoring his staff and program organization to fit the program will depend on the support he receives from the CHON and other senior officers in the Navy. Nevertheless, the acquisition team should be made up of a Financial Manager, a Logistics Manager, a Technical Manager (Systems Engineer), and a Contract/Budget Officer. The Program Management Office should be organized in a matrix method type. It is very important that the program interface effectively with the parent Command and other functional organizations in the VN. In Section II.C the principal tasks which are the responsibility of the SHAPM, the Acquisition Team and the Program Management Office have been described.

The most important document prepared by the SHAPM and its team at this phase is the Acquisition Strategy. This document should be used to describe the acquisition strategy for the entire acquisition program, and becomes the basis for acquisition decisions for the execution of the whole project. It should be prepared by the SHAPM, the Business Manager, the Contracting Officer and other appropriate functional specialists, with the assistance of the Juridic Consultor of the Navy working on legal aspects of the prospective acquisition.

The SHAPM should prepare a management strategy of such quality that it can be used as a source document for

guidance of the overall project and as a means for the interactions of individual program decisions with the Planning, Programming, and Budgeting System (PPBS). The Acquisition Strategy Document must serve as a responsive and flexible instrument for assuring that adaptive approaches to the acquisition process are pursued. Emphasis should be in the near term, but the procurement plan will be constantly under development and the acquisition strategy must be reviewed and updated periodically during the life of the program.

In Section II.C, the main factors to be considered by the SHAPM in developing his acquisition strategy has been indicated. In Section II.C.4, the different areas that should be included in the Acquisition Strategy Document have been described.

Since each program has different requirements, it is not possible to detail all of the items requiring consideration in preparation of every acquisition strategy. However, an appropriate acquisition strategy to meet the VN acquisition process for naval ships should include the following considerations:

Management Concepts

1. What is the urgency of the mission need?
2. Is the approach to be taken obvious or should alternative concepts be investigated?
3. SHAPM Organization and type
4. Monitoring progress and contracts, establishing management controls

5. Establishing the baseline for Integrated Logistic Support (ILS)

6. Scheduling (PERT/Time)

7. Selection criteria for choosing the best alternative

8. Methods for projecting life cycle cost

9. Funds available, timing

10. Manpower, resources, facilities

Contracting and Source Selection Activities

1. Type of contract for the naval ship, and each system and subsystem, and rationale for their selection

2. Procurement Plan

3. Criteria for Evaluation of Proposals

4. Preparation of Request for Proposal

5. Source Selection and Proposal Evaluation Teams (Committees)

6. Proposal Evaluation

7. Monitoring contracts, contract controls

The SHAPM for the DDG-51 acquisition program, in his acquisition strategy established that "...this acquisition strategy will be updated as required to support key decisions, changing factors internal and external to the program, and increasing levels of detail relative to program monitoring. Management plans will be developed, as appropriate, to implement and/or detail the various aspects of this strategy throughout the acquisition cycle." [Ref. 12].

The Acquisition Strategy which serves as a guidance for the Procurement Plan, should be submitted to the Chief of the Navy for consideration and approval at Milestone 1.

5. Phase 2: Technical Requirement Specifications and Source Selection

This is one of the most critical activities in the VN acquisition environment. Many complications arise in the procurement of naval ships in the international shipbuilding industry. As a result, decisions taken at this time in the acquisition process will have significant impact on the rest of the program.

It is at this point that one of the major modifications should be made to the existing process. Activities relating to Technical Requirement Specifications, Offer Solicitation, and Bid Evaluation should be developed and integrated during Phase 2. This phase starts with the development of the Technical Requirements Specifications immediately after the approval of the Operational/Functional Baseline by the Minister of Defense. Actions with respect to the Technical Requirement Specifications should be performed in accordance with Section III.C.3.

The SHAPM should have overall responsibility for the entire process. He coordinates the interactions between the Acquisition Team and people from other functional organizations assigned to participate in these tasks. It means that the SHAPM, not the Chief General Staff of the Navy nor the

Chief of Logistics, should coordinate the activities relating to determination of Technical-Operational and Technical-Logistic Specifications. He should also be responsible for activities concerning preparation of the Procurement Plan, investigation of the international market for shipbuilders interested in participating in the project, evaluation of prospective bidders (Bidders List), preparation of Request for Proposal, sending out Request for Proposal, reception and selection of proposals, bid evaluation, source selection, and preparation of the Final Report. In order to accomplish these tasks, the SHAPM will be guided by DIR-MA-CGM-0030-A and its attached INS-EVA-001. The Contracting Officer should advise the SHAPM about procedural directions in the formation, structure, source solicitation and proposal evaluation process.

Evaluation criteria should be flexible enough that they can be applied to the most diverse alternative concepts and still be sufficiently structured to permit equitable application to all proposals.

> "A partial list of critical factors that must be addressed includes: the effectiveness of the proposed concept in meeting mission need; the total life cycle cost (and here the contractor's estimates should be verified by independents estimates); manning and training requirements; the support constraints, including the minimum acceptable values for reliability, maintainability, goals for operatibility and safety requirements; and the track record of competitors, including their management structure and competence of their key personnel." [Ref. 9: 2-29]

Where possible, evaluation criteria should be quantified and each proposal appraised by the Evaluation Committees

under coordination of the SHAPM. Offers in response to the Request for Proposal (RFP) should be evaluated in accordance with an appropriate Source Selection Plan which should be prepared by the SHAPM at initiation of Phase 2. The final step in this phase is the consolidation of the Operational, Technical, and Financial reports and preparation of the Final Report. This task also should be the responsibility of the SHAPM. This procedure is different than the existing process where these actions are under the responsibility of the CHGSN, acting as General Coordinator.

A notable concern exists here in the VN acquisition environment about source selection activities. This has led to a search for better ways to evaluate different proposals and alternatives submitted for the best concept to satisfy the considered need. In his thesis, A Method for Acquisition of New Naval Ships [Ref. 27: 4-21], CDR Diaz Torres, concluded that acquisition of naval ships for the VN has lacking a scientific method to evaluate the alternatives presented to meet the Need Statement. He recognized the urgency for improving the source selection process and suggested techniques, such as Operations Research, and the Matrix Decision Method to accomplish these activities. The purpose is to present the advantages of each alternative in the most objective way.

Approval of the Final Report by the Minister of Defense at Milestone 2 as the last action in Phase 2 would

allow the acquisition process proceed to Phase 3, which should be called Procurement Plan Formulation.

6. Phase 3: Procurement Plan Formulation

There does not yet exist a clear definition of this phase in the existing Venezuelan Navy acquisition process for naval ships. Most of the activities related to the acquisition plan take place during the Project Definition and Contract Definitization Stage.

The author proposes that adequate activities, and decisions leading to the formulation of a Procurement Plan must be undertaken by the SHAPM and his Acquisition Team immediately after the approval of the Operational/Functional Baseline at Milestone 1. It should be done simultaneously with the preparation of the Source Selection Plan. As a result of these actions, formulation of a definitive Procurement Plan must be initiated after the approval of the Final Report.

The purpose of the Procurement Plan is to document, at an appropriate point in the acquisition cycle, the long-range contractual method(s) which will be used for the acquisition of a new ship or a ship which already is in operating condition. This plan should include realistic milestones to be met in achieving the goals for the acquisition of the ship and installed systems. This document would include, in general terms, the total management approach for acquiring a suitable system to meet an approved requirement.

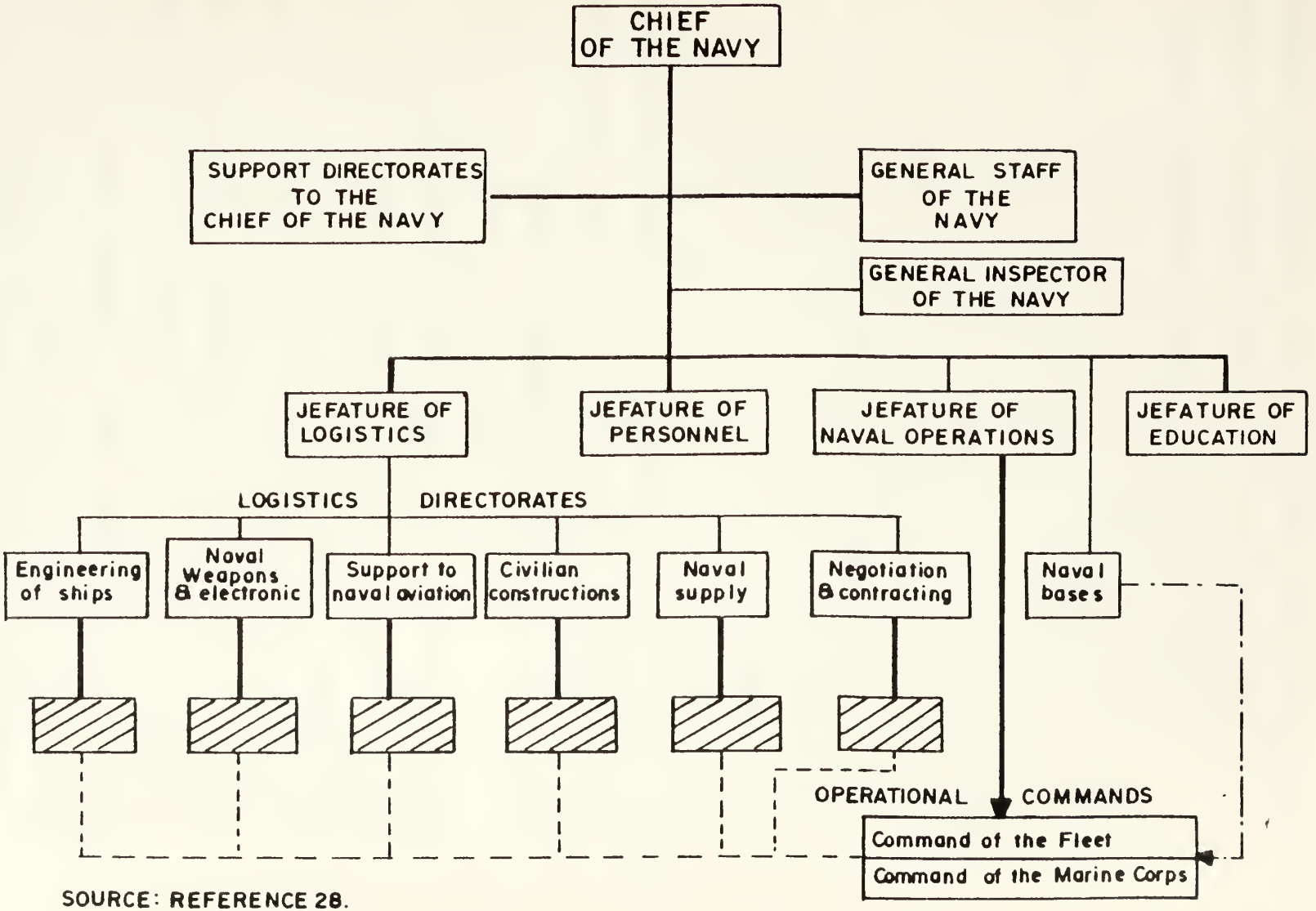
7. Negotiation and Contracting Structures and Procedures

Activities regarding Negotiation & Contracting activities take place during Phase 3. In the VN acquisition environment for naval ships, construction contracts for new ships and acquisition contracts for naval vessels already in operation, conditions are awarded. Letters of Offer and Acceptance (LOA) are considered for acquisition of ships through MAP/FMS programs. These procedures are different from the U.S.N. acquisition process for naval ships where several types of contracts are awarded depending upon the phase of the acquisition process (Chapter IV, Table I).

The VN does not currently have a distinct organization to carry out Negotiation & Contracting activities during the acquisition process (Fig. 3.4). Action relating to this subject are performed by people from different functional organizations under the responsibility of the JELO and supervision of the Juridic Consultor of the Navy (Section III.C).

In this research has been identified the need, in the VN organizational structure, for a Negotiation and Contracting Directorate. This Directorate should be assigned to the Jefature of Logistics and called Negotiation and Contract Administration Directorate (DINACO). In Fig. 5.2 is illustrated how the new logistic organization for Naval Material in the VN would be constituted with incorporation of this Directorate.

PROPOSED STRUCTURE FOR VENEZUELAN NAVY NAVAL MATERIAL



SOURCE: REFERENCE 28.
IMPROVED BY THE AUTHOR

FIGURE 5.2

This proposed structure is in accordance with the concepts expressed by CDR Suarez Manuel in his thesis, Model of a Naval Material Logistic System for the VN [Ref. 28].

The specific organization suggested in this proposal for the Negotiation and Contracting Directorate is illustrated in Fig. 5.3. This Directorate should be made up of the Jefature of the Directorate, a Department of Contract Negotiation, a Department of Contract Administration, and the Juridic Consultor of the Navy as the Legal Advisor. The purpose of this Directorate must be the negotiation and administration of the acquisition contracts for naval ships, systems, subsystems, and Integrated Logistic Support (ILS). The main objective would be to concentrate in a single organization different activities related to this subject which actually are performed by diverse Jefatures, Directorates and Offices in the Venezuelan Navy.

The SHAPM should understand the contracting process and must work with the business manager, technical manager, and the contracting officer to develop the most appropriate contracts. Close monitoring of the ongoing contracts by competent technical and managerial personnel is essential. The SHAPM should rely heavily on his contracting officer during contract negotiations. Both should examine the problems that are created through the interactions between the VN and the shipbuilder during the course of the contract

PROPOSED STRUCTURE FOR THE VENEZUELAN NAVY NEGOTIATION & CONTRACTING DIRECTORATE

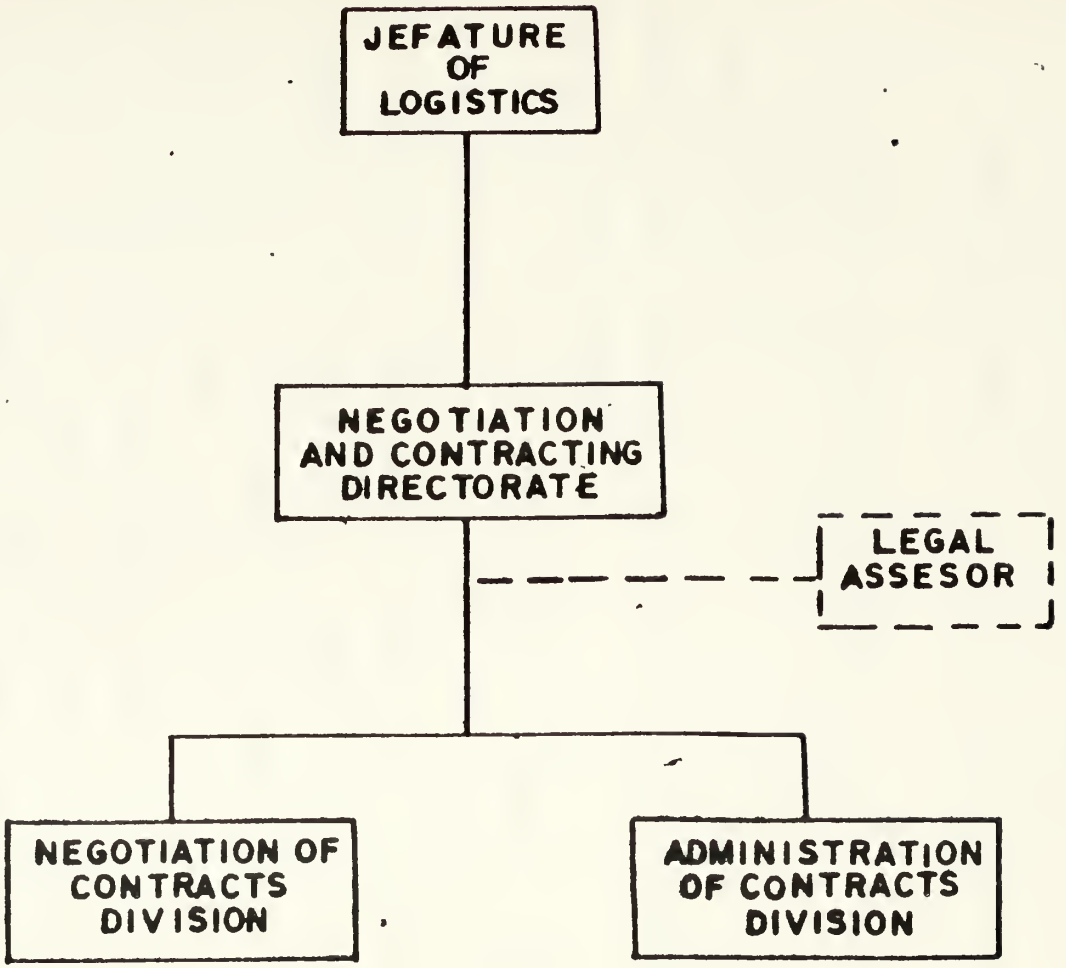


FIGURE 5.3

SOURCE: COMPILED BY THE AUTHOR

and the extent to which these problems contribute to managerial frustration, cost increases, and shipbuilder claims.

In Section II.E, concerning Negotiation and Contracting activities in the U.S.N. environment has been included information about contracting activities and management tasks performed during the U.S. Navy/Shipbuilder contract interrelations in technical, business, and administrative areas (Fig. 2.12).

The contract is one of the SHAPM's essential tools. He should, therefore, build a strong justification for the type of contract he desires for the project at hand. He must carefully choose the type of contract to be used for each system, and subsystems.

Basically, there are two types of contracts: Fixed Price and Cost-Reimbursement. The major distinction between the two is the nature of the seller's and buyer's obligation, and the amount of risk each assumes. Under a fixed price contract, the contractor must produce the required ship for a fixed price (or within the ceiling price of an incentive contract) or be subject to the penalties provided for in a default clause. There are various types of fixed price contracts such as firm fixed price (FFP), fixed price with economic adjustment (FPEA), and fixed price incentive (FPI).

Under a cost-reimbursement contract, the product is not paid for on the basis of fixed invoice price, rather the Navy pays the contractor's cost for material and labor, and

allowed portion of his overhead cost in accordance with appropriate clauses in the contract, plus a fee (profit) using an agreed formula. The principal cost-type contracts include cost plus fixed fee (CPFF), cost plus incentive fee (CPIF), and cost plus award fee (CPAF).

For the particular case of the VN, where only one acquisition contract is awarded during the entire acquisition process based on an existing design (construction or ship in operating condition), a fixed price contract is appropriate. It is easier to administer than the cost-reimbursement type and, theoretically, places the cost liability on the contractor.

The Contractual Document for the "Mariscal Sucre" class frigate program, established acquisition of the following items:

a) Six Frigates

b) Missiles

c) Training

d) Initial Logistic Support

e) Technical Support

The type of contracts selected were:

a) Fixed Price with Economic Adjustment for items a, c, d, e because the contract involved a long period of production (6 years) and a large amount of money. Besides this, the Italian economy was in a serious state of increasing inflation and the labor market was very unstable.

b) Fixed Price with Redetermination was selected for the missiles because the amount of labor and material required to complete the contract was known, but the wages and prices of material were unknown because of inflation and instability in the laboral market.

This has been the most controversial contract ever negotiated in the Venezuelan Navy acquisition environment. Many difficulties arose from the main clauses which were negotiated such as the missiles "Ottomat", propulsion system, interaction between systems, acceptance of new equipments which have not been tested before, training and warranties.

8. Cost Management/Life Cycle Costing

The SHAPM is faced with the dilemma of developing a satisfactory system in an environment of (1) changing enemy threat, (2) increasing cost and shortage of skilled personnel, (3) increasing cost of materials, (4) decreasing real budgets (inflation), and (5) economic conditions of the shipbuilder's country. Within the confines of this dilemma, the SHAPM must get the best naval ship and its systems for the least dollars.

The objective of life cycle costing and cost management should be to obtain sufficient quantities of an operationally acceptable system at the lowest affordable cost. To do this, the SHAPM must utilize cost trade-offs, beginning during the source selection phase and continuing through the program.

The program's cost estimating and control techniques must be tailored to arrive at the best estimate and to control the system's total life cost. The SHAPM must consider the best balance between cost/performance/schedule/logistic

supportability. Rigid goals should not be established prematurely, however, so as to allow a proper balance between these considerations to evolve in a climate of flexibility.

The importance of this subject has been evidenced in the thesis of CDR Gil Rojas, An Approach to the Application of Life Cycle Cost Concept in Weapon System Acquisition for the Venezuelan Navy [Ref. 29]. A methodology for preparing estimates of the investment and operating and support cost of ship acquisition programs is developed. The use of cost models in procurement is analyzed and a methodology for implementation of Life Cycle Cost acquisition within the Venezuelan Navy is presented. This is a valuable source which can be used by the SHAPM for assistance in Life Cycle Cost Estimation.

9. Integrated Logistic Support (ILS)

In the U.S.N. acquisition process for naval ships, ILS planning effort is identified in the Conceptual and Definition Phase, and actively pursued during the Full-scale Development Phase. In the VN acquisition process for Major Defense Systems, the ILS concept is not applied as such. Instead, initial logistic support is included in the acquisition contract for naval ships to get spare parts, tools, and test equipment for a certain initial period. The reason for this is basically budget constraints (Chapter III, Table 1).

One of the major duties of the SHAPM, in conjunction with the logistics manager, is to develop and update when necessary an Integrated Logistic Support Plan (ILSP). This plan would provide a framework for organizing and managing the resources and activities which should culminate in efficient, cost-effective Fleet support for the naval ships to be procured. In addition, the ILSP would reduce uncertainty in support planning, ensure compatibility of resources, and diminish the duplication of effort.

Integration is the key to good support planning. ILS is a technique for designing the appropriate support in order that the optimum balance of logistic support elements can be achieved. The principal ILS elements to be included in a suitable ILS Plan for a Venezuelan Navy ship acquisition program should be:

a) Maintenance Planning
b) Manpower and Personnel
c) Supply Support
d) Support and Test Equipment
e) Training and Training Devices
f) Technical Data
g) Transportation and Handling
h) Facilities

There are many related disciplines and activities which are not considered ILS elements but which ultimately have influence on support. Reliability, maintainability,

human factors engineering, safety, data management, and configuration management are some of these.

Activities and tasks regarding ILS are assigned in the VN environment to an organization which is called SILAI (Logistic System of Integrated Support). It has the responsibility to formulate policy, procedures and instructions in this area. Nevertheless, the ILS for "Mariscal Sucre" class frigate program concerning supply support and maintenance planning at the first, second and third levels, was the responsibility of the Venezuelan Naval Mission in Italy. ILS Plan was included by the Naval Mission in its Administrative Inform (INF-AD-MNV-008) issued in January 22, 1979 [Ref. 31].

As was mentioned in Section V.B, the last step in Phase 3, at Milestone 3, should be the approval of the Procurement Plan. The main action at this time are: update the Acquisition Strategy, and approval by the CHON of the Integrated Logistic Support Plan. Also, the Definitive Contract is signed at this point by the Contractor(s) and the Minister of Defense. This action allows the process to pass to the last phase.

10. Phase 4: Procurement Plan Implementation, Production, and Deploy

The first stage in this phase is the Procurement Plan Implementation. It is started early by selecting people who are going to participate in the project as members of the Venezuelan Naval Mission (VNM) or as crew members

for the first ship to be delivered. Members of the Venezuelan Naval Mission should be: the SHAPM, as the Chief of the VNM, and members of the Acquisition Team as heads of each functional department required. If some positions are to be filled in the Naval Mission, it should be done with people working in the project since its initiation.

At this stage, the "Administrative Procedures and Norms Manual" has to be issued. This document must be prepared by the SHAPM and his Acquisition Team, approved by the CHON before starting the Production Stage, and updated each time that any significant change is necessary.

At this time, there must exist a document called General Document. It must form part of the Definitive Contract and should have been prepared during Phase 3 by the SHAPM, his Acquisition Team, and Representatives of the Contractor(s). The main items in this document are: purpose of the contract, ship description and its characteristics, documents which make up the contract, norms relating to test and acceptance of the ships, fundamental design conditions, standards and specifications, and other items not included in the Definitive Contract.

The second stage in this phase is the Production Stage. The center of attention in carrying out the acquisition process now shifts to the contractor's country. This stage should start with the interactions between the Venezuelan Naval Mission Teams, which comes to the shipbuilder's

country and integrate with their counterparts, the prime contractor and the major subcontractors. Now the program must start to be monitored under requirements of the following documents: Administrative Procedures and Norms Manual, the General Document, and the Definitive Contract.

The naval ship, its system and subsystem specifications are among the most important management tools that must be used during this stage of the acquisition process. When disagreements between the VN and a contractor develops, issues are resolved on the basis of what the specifications say, and not what they are intended to say. The SHAPM must realize that preparation, review and maintenance of the program's specifications should be given close attention by the most competent members of the SHAPM Office. A product specification is defined in the U.S. MIL-STD 480 as "a document applicable to a production item below the system level, which states item characteristics in a manner suitable for procurement, production and acceptance" [Ref. 9: 3-84].

The General Document prepared for the "Mariscal Sucre" class frigate acquisition program established that each frigate must be built in accordance with the General Specifications, Detailed Specifications, and the Technical Norms of the Italian Military Navy [Ref. 30: 1].

The third stage in this phase is Deployment in Venezuela. The process is shifted back again towards in-country activities. This stage starts when the first naval

ship is accepted and delivered to the Venezuelan Navy, and continues as long as all the units are deployed in country provided with their respective logistic support. Following are some tasks that should be performed at this time:

1. Ensure the existence of the logistic support capability in Venezuela.
2. Establish the operation and maintenance crew training facilities.
3. Provide the appropriate test equipment and special tools that are necessary for maintenance.
4. Provide adequate and complete documentation, publications, and technical assistance for operation and maintenance tasks.
5. Provide proper facilities for maintenance and supply.

This completes the proposed acquisition process for naval ships in the Venezuelan Navy, carried out in accordance with Model "A".

C. SHIP ACQUISITION STRATEGY THROUGH MAP/FMS PROGRAMS: MODEL "B"

In Section V.A was indicated that this Acquisition Strategy Proposal considers, as Model "B", the particular procedures developed in the VN acquisition environment to procure naval ships from the United States Government (USG) through Military Aid and Foreign Military Sales (MAP/FMS) programs. Since 1950 Venezuela has been able to acquire naval vessels from the United States Government. In the last decade, despite certain pros and cons, both programs have been regarded worthy to implement this acquisition process, which

requires special administrative and technical skills, scarce in the VN, but available in the U.S. Department of Defense (DoD). A list follows of naval ships which have been transferred from the U.S. Navy to the VN in the last 10 years.

Date	Naval Ships
Dec. 8, 1971	USS CUBERA (SS-47)
Jun. 20, 1972	USS BEATTY (DD-756)
Jun. 22, 1973	USS GRENADIER (SS-525)
Jan. 10, 1974	USS ROBERT HUNTINGTON (DD-781)
Dec. 30, 1977	USS MARIETTA (AN-82)
Dec. 30, 1977	USS UTINA (ATF-163)
Dec. 30, 1977	SASSACUS (YTM-193)
Oct. 4, 1978	SALINAN (ATF-16)
Oct. 4, 1978	NIPMUC (ATF-157)

Acquisition process implementation for these naval ships is based on different directives, procedures and regulations existing in the USG to carry out MAP/FMS programs. This policy has, as the main document, the Letter of Offer and Acceptance. Necessary preparation and submission steps for its approval, and implementation have been indicated in Section III.D.

To simplify the particular acquisition process for naval ships from the USG, the main objective of Model "B" in this proposal is to integrate the USG policy and procedures with the existing Venezuelan Navy concept.

In order to do that, some difficulties in the existing process have to be overcome. This must be done by applying, where required, the policy, concepts and procedures already indicated in Chapter V. The Definition of phases and milestones for this particular case is illustrated in Figure 5.4; Proposed Structure for the VN Acquisition Process: Model "B".

PROPOSED STRUCTURE FOR THE VN SHIP ACQUISITION PROCESS

MODEL "B"

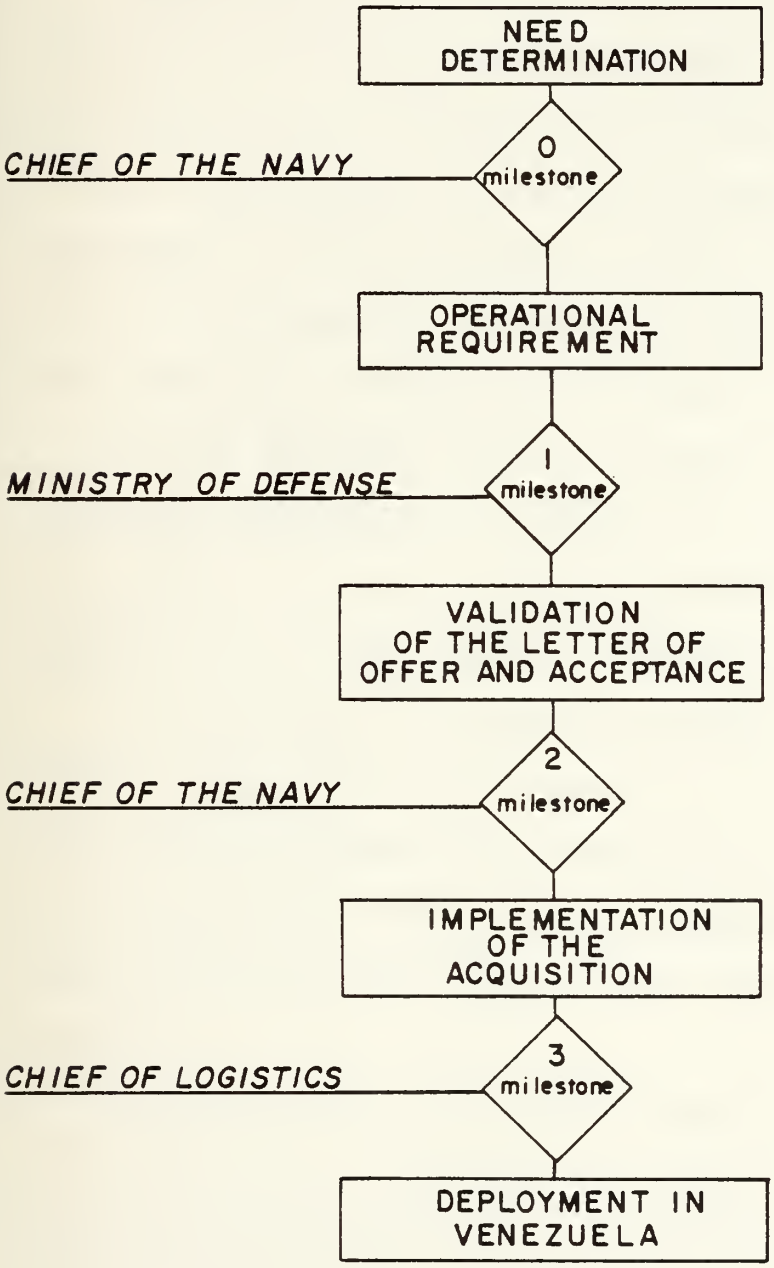


FIGURE 5.4

Source: Prepared by author

VI. CONCLUSIONS AND RECOMMENDATIONS

A. SUMMARY

Venezuela has changed in the last thirty years in many aspects such as political, economics, social and military, but change in its administrative procedures has been coming slowly. The country is demanding application of effective management tools and administrative techniques to make possible the realization of ambitious plans, programs and projects that have been formulated to achieve national objectives.

In the Venezuelan Navy, appropriate management policies are being implemented to improve the organization. Nevertheless, one of the most difficult tasks to perform is the acquisition of naval ships from the international market.

In this thesis a comparison between the Venezuelan Navy and U.S. Navy acquisition process for naval vessels has been made. It has shown to determine that both processes are different because various strategic environments and diverse domestic capabilities combine to create unique acquisition methods.

Evaluation of the Venezuelan Navy acquisition process for naval ships has pointed out notable deficiencies in the existing procedures to carry out these activities. Advantages of some concepts applied in the U.S. Navy acquisition method such as the structural concept of phases and milestones,

Ship Acquisition Program Manager and the Ship Acquisition Program Management Office concepts, could be adopted and integrated in the VN acquisition environment. However, an appropriate adaptation has to be made to meet VN requirements and constraints.

Analysis of nine critical areas in the acquisition process has resulted in the formulation in this thesis of a proposed management strategy, represented by Model "A" and Model "B", to procure naval ships from the international market and from the United States Government, respectively.

In order to formulate this management strategy, diverse functional and structural organizations, procedures and roles of key individuals have been evaluated in both acquisition methods. While a new process is not going to solve all the Venezuelan Navy acquisition problems, it will provide a basis for improvement of the existing one.

B. CONCLUSIONS

During this research, the following conclusions have been determined:

- The Venezuelan Navy acquisition process for naval ships presents deficiencies in critical areas identified during the review of the whole acquisition cycle.

- The VN Acquisition Flowchart (Figures 3.1 and 3.2), which has been used as a guide to carry out the acquisition process for naval ships, is incomplete.

- No single organization exists in the Venezuelan Navy to conduct the necessary negotiations nor to specifically manage and direct needed contracting procedures.

- The Ship Acquisition Program Manager and Ship Acquisition Program Management Office concepts are not being used at the present time in the VN ship acquisition process. Instead, a Venezuelan Naval Mission is created when required. The Chief of this Mission manages the acquisition process in its last phase.

- The Source Selection process is one of the most critical areas. This process is lacking appropriate management techniques to select and evaluate the best concept to meet the "Statement of Need".

- Cost Management/Life Cycle Costing principles have not been applied in acquisition of naval ships.

- In the VN acquisition process for naval ships, the Integrated Logistic Support concept is not applied in all its extent. Incomplete logistic support is procured only for certain initial period (five years) when naval vessels are incorporated into the Fleet.

C. RECOMMENDATIONS

- The principal recommendation resulting from this search is for the Venezuelan Navy to implement the proposed acquisition strategy discussed in Chapter V, based on Model "A" and Model "B". It has been formulated from a management

point of view to assist the managers of any naval ship acquisition to carry out this complex process.

- Model "A" should be used when procuring naval ships from the international market, except from the United States of America. Model "B" should be implemented when procuring naval ships from the United States of America.

- The existing policy, procedures, and instructions being used by the U.S. Government to execute the Military Aid/ Foreign Military Sales Programs, represent a notable advantage for the VN to carry out the acquisition program process of major defense systems.

- The proposed structure for the VN acquisition process consisting of 5 phases with 4 well-defined decision milestones should be adopted. This structure would allow better implementation and decision-making in the entire process, simplifying its control.

- The SHAPM, and Program Management Office concepts should be adopted. The SHAPM should be appointed immediately after the approval of the Operational/Functional Baseline (OFB). From this point in the acquisition process the SHAPM must be the sole person responsible and accountable for success or failure of the acquisition program.

- Activities regarding Technical Requirement Specifications, Request for Proposal, Qualification of the Shipbuilders, Bid Evaluation, and Preparation of the Final Report should be assigned to the SHAPM and his Acquisition Team.

- A Directorate for Negotiation and Contracting should be created in accordance with the proposed structure. This Directorate should be assigned all contracting tasks to be carried out in the VN acquisition environment.

- The program's cost estimating and control techniques should be tailored to control the system's total life cycle costs. A methodology for preparing estimates of support investment and support cost of ships should be implemented.

- The SHAPM in conjunction with his Logistic Manager should develop and update an Integrated Logistics Support Plan. This plan should be used as an important administrative tool in order to provide a framework for organizing and managing the resources for effective operational support for the naval ships to be procured.

APPENDIX A

UNITED STATES OF AMERICA AND VENEZUELA ACRONYMS

United States of America

CO	Contracting Officer
DAE	Defense Acquisition Executive
DCP	Decision Coordinating Paper
DNSARC	Department of the Navy Systems Acquisition Review Council
DOD	Department of Defense
DON	Department of the Navy
DSARC	Defense Systems Acquisition Review Council
DSB	Defense Science Board
DSD	Deputy Secretary of Defense
FMS	Foreign Military Sales
FYDP	Five Year Defense Plan
GFE	Government Furnished Equipment
GFI	Government Furnished Information
IPS	Integrated Program Summary
LCC	Life Cycle Costing
LOA	Letter of Offer and Acceptance
MAP	Military Aid Program
MENS	Mission Element Need Statement
NAVMAT	Naval Material Command
OPNAV	Office of the Chief of Naval Operations
OR	Operational Requirement

PDM	Program Decision Memorandum
PIP	Product Improvement Plan
PM	Program Manager
PMO	Program Management Office
PPBS	Planning-Programming-Budgeting System
PP	Procurement Plan
RDT&E	Research, Development, Test and Evaluation
RFP	Request for Proposal
(S) SARC	Service Systems Acquisition Review Council
SECDEF	Secretary of Defense
SDDM	Secretary of Defense Decision Memorandum
SHAPM	Ship Acquisition Program Manager
SLMP	Ship Logistics Management Plan
SPD	Ship Project Directives
SSDS	Ship Systems Design Support
T&E	Test and Evaluation
TLR	Top Level Requirement
TLS	Top Level Specifications
USG	United States Government
USN	United States Navy

Venezuela

CHGSN	Chief of the General Staff of the Navy
CHON	Chief of the Navy
CHNM	Chief of the Naval Mission
CHNMI	Chief of the Naval Mission in Italy

DSCD	Defense Strategic Concept Document
ECs	Evaluation Committees
FYDP	Five Year Defense Plan
GSN	General Staff of the Navy
ILSP	Integrated Logistics Support Plan
JCOS	Joint Chief of Staff
JELO	Chief of the Jefature of Logistics
JLO	Jefature of Logistics
JOP	Chief of Naval Operations
MD	Ministry of Defense
MOD	Ministery of Defense
NEP	National Economics Plan
NSC	National Security Council
NSCD	Naval Strategic Concept Document
OFB	Operational Functional Baseline
SJAF	Superior Junta of the Armed Forces
OR	Operational Requirements
TRS	Technical Requirements Specifications
VG	Venezuelan Government
VN	Venezuelan Navy
VNM	Venezuelan Naval Mission
VNMI	Venezuelan Naval Mission in Italy

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